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Our Prize Essays.

THE TURNIP AND ITS CULTIVATION.

BY R. GIBSON, FARMER FOR WM. BEEBE, ESQ., NORTHPORT, N. Y.

"More roots, more stock;—more stock, more manure;—more manure, better crops."

As brevity is said to be the soul of wit, so I consider that an essay of this kind, to be practical, should be as concise and as much to the point as possible. I will, therefore, commence at once with what I consider the great secret of successful cultivation of the turnip, viz:

AUTUMNAL CULTIVATION.—Every observant man will have noticed that in his stubble fields, directly after harvest, the weeds are looking in a comparatively weak and sickly state. He will also notice, if he goes into his fields two weeks afterwards, that some of those weeds have grown into large bushes, some not much larger than they were, but all bearing (if not already distributed) innumerable seeds, ready to be distributed over his fields by the first breeze, there to lie until the soil be brought into a proper state for their germination. He will rightly conclude that the proper time for him to fight these, his natural enemies, (or weeds) will be when they are weak, and before they have distributed their seeds. Therefore, as soon after harvest as possible, the two-horse cultivator should be used at such a depth as to get below the couch grass, if there is any; if not, just skimming the surface will be sufficient—if necessary, to be crossed by the same implement, followed by the harrow and roller—all couch grass, weeds, &c., which have been brought to the surface, to be collected and burnt, or carted off, making good foundations for manure heaps in barn-yards. If this has been properly done, you will have a nice seed-bed; if not, you must harrow and roll until you have, when the first rain will cause all seeds lying in the soil to the depth cultivated, to germinate. When you judge all seeds have started, it should be plowed up deep, except on light sands or sharp gravels, which may be plowed the regular depth, again harrowing and rolling until you have a fine seed-bed, causing all other seeds left in to germinate and be killed by the frosts. Your land will then be ready in the spring; whereas, if it is not touched until that time, what with the spring seeding, corn, and potato planting, &c., it often gets neglected until just before you want to sow, when the land requires more working, the season is not so propitious for killing weeds, and being more of them, viz., those that seeded in the fall, will cause more labor, and a week's rain at that time might cause you to lose your proper seed time, and perhaps a crop. I will say nothing here on the benefit derived, more especially on strong land, from the action of the frosts, air, &c., but I cannot leave this subject without again impressing upon the farmers of America, the great advantages derived, not only for the root crop, but also for their spring grain, by autumnal cultivation. After cleaning in the fall, all the working that will be required in the spring will be to get it into a proper state for the germination of the seed. You cannot have it too finely pulverized; the soil should fall from the plow like meal.

VARIETIES.—There are three classes of Turnips, viz., Swedes or Ruta Baga, Yellow, and White. The White or common turnips are sown last, but used first, followed by the Yellow, and lastly the Swede, which is the kind generally grown to store for winter use, and the one I will more particularly describe.

There are several varieties of Swedes—Skirving's improved purple top being most generally sown. Laing's purple top is also a very good kind—does not grow so large as Skirving's, but of a better quality; top very small.

SOWING.—There are two ways of sowing—either on the flat, in rows from 18 to 22 inches apart, or on ridges 26 inches apart. Each plan has its advocates; for my part I prefer the ridge on all soils except very light, as being so much easier to hoe and keep clean, and also where much farm-yard manure is used, as you get the manure just under the root.

RIDGING.—I will endeavor to describe how to ridge with a common plow. Many people will not have a double mould-board plow, and ridges can be made equally well with a common one; in fact I prefer it. The plowman commences the same as if he were common plowing, by opening a ridge 5½ yards from fence; but instead of backing it up he turns "haw again," and plows back on land-side, leaving a ridge about

eight inches wide at top; he then keeps plowing round, making a fresh one every time until he comes to the fence, when he ought to have thirteen made. He must then wait until dung is put in the five nearest to the fence, and if guano is used it should be sown now. When they are dunged through from one end to the other, he commences to cover up the dung by splitting or running his plow down the centre of ridge nearest fence, coming back by making a fresh one; every time going down he splits a ridge on the dung, and every time coming up throws out a fresh one; by that means there will always be five ridges for them to be spreading the dung in while the plowman is making five more. If the ridges are made the proper width, say 26 inches apart, there will be just room for the wagon to go down between them without treading on the land—the horses should have long neck-yokes, and be driven wide apart, so as to walk in the furrows the wheels run in; if carts be used the horse will walk in centre one. One man and team will ridge about three acres a day, if he has not to wait for manure being spread. A light roller should now be run over the ridges, followed by the drill, which should keep close up to the plow, so that the seed may be deposited in the fresh soil.

On the flat the barn-yard manure is spread on the surface and plowed in, followed by the roller. The artificial should be sown by hand and well harrowed in; that is if your drill won't distribute both manure and seed. I hav'nt seen any here to do so, but in England our drills apply the manure in rows deeper than the seed, with a little mould between each.

MANURES.—Of the various kinds of manure I have used, I found good farm-yard dung answer best, taking all soils and seasons into consideration. When I say dung, I don't mean straw and water, but manure made from animals eating oil cake or grain, and made in sheds or good yards, with buildings well spouted, applied at the rate of 15 to 25 loads per acre. But some will not have sufficient manure to spare, therefore must use some artificial, and, indeed, though not absolutely necessary, it is what I would always advise to give the young plant a good start, and force it along so as to get out of the way of the fly as fast as possible. I have tried nothing that answers the purpose so well as superphosphate of lime, applied at the rate of 2½ cwt. per acre. Others may be so situated that they have no barn-yard manure to spare; in that case I would sow bone dust at the rate of 12 to 15 bushels per acre. Half-inch bones will last longer in the ground, but will not be so available to the turnip as dust. I tried several experiments in England, but unfortunately have lost the results. In one I recollect each plot had the same quantity of barn-yard dung, and same money value of artificial—soil gravelly loam, and that bone dust yielded the heaviest weight, superphosphate of lime next, home-made poudrette, consisting of night soil, pigeons' dung, and coal ashes, next, and Peruvian guano worst. In the following crop of barley, it was plain to see where the bones and poudrette were applied. What manure is applicable to one soil is not to another; a man must ascertain for himself what suits his land the best; there are so many circumstances to be taken into consideration—character of the soil, previous course of cropping, climate, &c. It would be foolish to say bones would suit all lands, or that because guano failed on a certain soil, it was no good. It is like a physician prescribing for a man when he doesn't know his disease. I have never found bones to fail,* and of this you may be sure, that good barn-yard manure always tells. There are several theories in its application. In Scotland and parts of England it is applied green, *i. e.*, fresh out of yards; then again it is well fermented and turned over twice. In my opinion, it is best applied to strong lands, long and unfermented, as it helps to keep it open and porous, but for lighter soils, I would haul out my dung to the fields in the winter time, as it would be forwarding the work in the spring, and would make large heaps 60 or 70 loads in a heap, and to prevent its fermenting too fast, would draw the loaded wagons on the top every time—would then square up the heap and cover with soil; about three weeks or a month before using, would turn over again, covering with soil.

One of the best crops of Swedes I ever saw, certainly the largest specimens, was grown on new land in Canada West. The timber was all burnt on the ground—the ashes well spread. It was burnt in good time, so as to allow the log-heap bottoms to get well cooled, and had also a shower or two of rain to leach the ashes, both which must be attended to on new ground. It was then sown broadcast, without being plowed, at the rate of half pound seed per acre, and brush-harrowed in. The seed was well sown, and took very little hoeing. The great difficulty in sowing broadcast, is to sow thin enough. It is a cheap way to grow roots by anybody that has new land; they are also safe from the fly, never attacking them when sown on land where the timber has been burnt.

TIME OF SOWING.—Swedes should be sown here from June 10th to 18th, or if a favorable season, would do up to July 10th. When sown too early there is danger of growing too much into top in the autumn, and if too late the crop will be light. The late sown ones generally escape the fly the best, and if they have a good dressing of artificial, to force them along well in their early growth, will often be better than the first sown ones.

QUANTITY SEED PER ACRE ABOUT THREE POUNDS.—For the sake of an extra pound of seed per acre, a crop has often been lost. Sow think enough, so that if the fly does attack them there will be plenty left for a crop; besides the thicker they are sown, the quicker they will be out of danger, the plants drawing each other up. When drilled on the flat, five pounds of seed will be about the quantity needed.

AFTER CULTIVATION.—The young plants will make their appearance in about six or seven days. As soon as they can be distinctly seen, they should have the horse-hoe run through them, and when the plants are about three inches high they will be ready for hand-hoeing; and this is one of the most particular operations of the whole. If the horse-hoe has been properly used, it will have left a ridge from three to four inches wide, and two to three inches above the general level, with a row of plants in the centre; these are singled out with the hand-hoe, by alternately pushing and pulling, which will give the ridge the proper form, being careful to leave but *one plant at intervals of* 12 *inches*, and if the land is very rich they may be left still farther apart.

I have had the greatest difficulty in getting men to hoe properly; they will leave them too close. If your land has been properly cleaned before sowing, it will require very little attention—now running the horse-hoe through a couple or three times, and it may require going over again with hand-hoes. But if the weeds make their appearance, keep up the battle. You can't grow both. Whenever they show themselves keep the horse-hoe moving; let them get once well ahead, and you are beaten. A man should horse-hoe from four to five acres a day, and single hoe one-third. When sown on the flat he won't be able to do so much, and the plants may be left still farther apart. When singling save some of the finest plants to fill up blanks with, if there are any. Swedes will do very well transplanted; white or common turnips won't bear it.

PULLING.—A man must be guided by the climate in his part. They should be safely pitted before frost sets in sharp; frost won't hurt them if they are not pitted frozen. We commence here, (L. I.,) about Nov. 17th. I will endeavor to describe a way we used to pull our

* We have known an instance where bone dust was applied to ruta bagas without any sensible effect. *Eds. Co. Gent.*

turnips in Canada, (commence about Nov. 10.) I have seen it done nowhere else, and was surprised to see it answer so well. Take a sharp hoe and cut off the tops of two rows, gathering them with your foot as you go along. When you have gathered a good sized heap, pull up a few turnips with your hoe where the heap is to be. Another man brings along two more rows, and piles his tops on the same heap, so that the tops from four rows are piled together in one row of heaps. They should be made large and well set up, and then they will keep good up to Christmas. Care should be taken to pile the tops in a line each way. When you have taken off all the tops, run a pair of harrows between the rows of tops, and then cross harrow them. If the turnips are large and ground dry, it answers well and is very expeditious. The only two winters I spent in Canada I helped to take up eight acres that way; we had not a rotten turnip, and were feeding in May. The way generally practiced is to have knives about ten or twelve inches long, made out of old scythes; cut off tops and bottoms. Better leave a little soil on than cut deep in the root. Two men work together, each taking two rows, putting roots in rows between them, and piling tops in heaps in the outside man's row, so as to load up turnips from each side of the wagon, without driving over the tops.

STORING.—They may be either stored in the field in small heaps, or carted home and put in long piles. If piled in the field, the heaps should be about a yard and a half wide at the bottom, and about the same height, gradually sloping to the top—may contain 60 to 100 bushels, according to the crop. being either carted or thrown together by hand, as most convenient; the heaps to be covered with straw and then with about 10 inches of soil, well beaten down, so that there are no cracks or open places where the frost can get in. Those placed in long piles to be done the same—care being taken that they are made on top of the ground, in a dry situation, and at intervals of 6 or 8 feet. Drain pipes or whisps of straw should be placed in the ridge to allow the heat and steam to escape, for after being placed in large heaps they always heat more or less, and if there is no vent for steam, &c., to escape, it rots the roots—more turnips are rotted every year by being covered too close than by frost. I don't like cellars so well as pitting; they are very well to hold sufficient for a month or six weeks consumption; 1,500 to 2,000 bushels, as many cellars hold, are too many to put in a heap. No cellar should be built under a valuable building, as the steam is very destructive to all kinds of wood. I know a building that has had one new set of sleepers, and the third floor is being put in this winter, in twelve years, all rotted by the steam and heat. When put in cellars they should be placed on rails and have ventilators from the rails, consisting of four boards, about six inches wide, nailed together in form of a chimney, with auger holes bored in them.

Of the various kinds of yellow and white turpips, I consider the yellow Aberdeen and green round to be the two best varieties. They may be sown after rape or oats and vetches, cut green in the spring, or directly after harvest. Plow up your cleanest stubble field, harrow and roll to pulverize, bearing in mind you cannot have it it too fine; a little guano or some other quick acting manure to be well harrowed in before the seed is sown, which may be done either with the drill in rows sixteen to twenty inches apart, at the rate of two pounds per acre, or sown broadcast with one-half pound per acre; these seeds being much smaller, sow thicker than Swedes. The largest turnips I raised this year were grown among corn, just before the last cultivating; was sown with one-half pound per acre, strap-leaf turnip. Be careful and get good new seed. Old seed is unsafe, but Swede seed will keep good two or three years.

FEEDING.—The tops will be used. First, they may be carted and spread on the grass land.

Turnips should always be cut for stock, but if you have not a proper machine, be careful how you cut them for cattle, as they are more liable to get choked by a turnip badly cut than by feeding them whole. R. H. Allen, Water St., N. Y., sells a very good machine. By turning the handle one way you cut in slices half an inch thick for cattle; by turning the other, into oblong rectangular pieces for sheep. A long wooled sheep will eat from ten to fifteen pounds Swedes a day; a Merino not so much, that is, give them what they will eat. In England they keep the feeding sheep without water to cause them to eat as many turnips as possible. When you commence feeding, don't give too many, as they will be apt to scour them. If you want to fatten sheep, you may give all the turnips they will eat, giving a little hay or straw first, turnips here being too cold on an empty stomach. Suppose you feed hay first thing, then turnips, grain at noon, turnips again at night, with oat or pea straw in racks.

If your straw was cut green and well cured, you will require very little hay for a breeding flock of ewes, if you have roots for them, but be careful not to give the ewes them on an empty stomach. I believe that is one cause of water or pot bellied lambs. If you have good pea haulm and cornstalks, and allow each sheep three or four pounds of turnips in the middle of the day, you will not require either grain or hay until a short time before lambing, when the ewes should be allowed a little hay.

Cattle will eat from one to two bushels a day, according to age, breed, &c. I have seen cattle fattened in England on oil cake, turnips, and straw, without tasting hay or grain. Cattle will winter well here without hay or grain, and grow well on turnips and and straw, with cornstalks once a day. The most economical way to use them is by pulping, *i. e.*, broken up fine like apple pulp for cider. I worked a machine that pulped 100 to 120 bushels an hour. Mixed with cut straw, and allowed to lay a day, cattle eat it with great avidity. You don't require so many turnips, and you can make use of all kinds of refuse straw that cattle would not otherwise eat. Mangolds are better for milch cows than turnips, not that they cause a greater flow of milk, but because turnips are apt to give a strong taste to the milk. They also make very good feed for hogs when boiled and mixed with meal.

COST OF PRODUCTION.—In estimating the cost of growing an acre of turnips—I am calculating the land to be foul and require cleansing—the cost, of course, would not be so much on clean soils.

Fall—Two cultivatings,		$1.50
	Two harrowings,	50
	One rolling,	25
	One plowing,	1.50
	Two harrowings and rolling,	75
	Gathering off Couch grass,	50
Spring—Plowing and cultivating,		1.50
	Harrowing and rolling,	50
	Ridging,	1.00
	Manure,	7.00
	do. Artificial,	3.50
	Hauling and spreading manure,	3.00
	Seed,	1.50
	Drilling,	50
	Horse-hoeing four times,	1.50
	Hand-hoeing,	3.00
	Pulling and topping,	2.50
	Heaping and covering,	1.50
	Interest on land,	2.00
	Total,	$33.50

The season being propitious, with the above treatment, 700 bushels ought to be raised per acre.* I have grown upwards of 1,000 per acre. If hay is now selling at $30 per ton, and three pounds of turnips be considered an equivalent to one pound of hay, at 700 bushels per acre, will leave the feeding value of an acre $210; and I mantain that stock will be healthier having turnips in winter, than to be confined to dry

* Which at this cost would be about 5 cts. per bushel.—EDS.

food altogether. It is against nature to be fed exclusively for six months on succulent food, and the next six on dry feed.

In this neighborhood, (L. I.,) turnips have been sold at $1.50 a barrel in the field, which makes $350 per acre.

I have charged one-half the value of the manure, calculating the land to be benefitted three years.

The tops I have not charged for, but consider them worth $8 per acre.

ROTATION OF CROPS.—A root crop here can never bear the same relation to other crops in the rotation as it does in England—there it is the great crop for cleaning and manuring the land for another course. Here it must be grown in a great measure for the value of the root alone—not for the benefit derived to the land by the cultivation of that root; there half the crop is generally eaten on the field where grown by sheep, the other half being fed to cattle in sheds—here it must be regarded more as a crop which may be profitably used to keep our cattle and sheep in a growing and healthy condition through our long winters. Though here much more might be done towards increasing the fertility of our soils by growing white turnips and eating them on the land by sheep; they should only have as much given to them as they will eat up in 3 or 4 days, being confined by hurdles. Even in this climate they might be kept out nearly until Christmas when they would be ready for the butcher, if in fair order when commencing to feed.

I have said nothing about the manurial value of a ton of Swedes. Mr. Lawes computes it at four shillings three pence a ton, equal to $1 of our money.

As a crop in the rotation, would take a field that wanted cleaning, as you have a better chance to get your land thoroughly cleaned with roots than any other crop, though it will be more trouble. After roots, if your district is suitable to the growth of barley, would sow that, and seed down, as it is well known grass seeds catch better with barley than anything else, and the soil after turnips, with the constant hoeings, is generally in just such a friable state as barley delights in.

CONCLUSION.—In summing up, the main things to be attended to are thorough pulverization of the soil; the crop to be kept well clean; you may as well expect figs from thistles as to expect turnips to grow with weeds. Give plenty of manure; the turnip is grateful and will pay you good interest for what it uses, and what remains will not be lost, the next crop receiving the benefit. Keep the horse-hoe moving even if there are no weeds. Give plenty of room; let there be not less than 12 inches from plant to plant. Do every thing required in its proper season.

What is it that has brought the land in some parts of England to the present high state of cultivation? Sheep and turnips. I know large tracts of land in Lincolnshire which 30 years ago were let at two shillings six-pence, fifty cents, merely as rabbit warrens, being thought too poor to grow any thing—light blow-away sands—are now being let at 50 shillings, equal to $10, per acre per year; by growing white clover and turnips, and eating all on the land with sheep, it soon became capable of growing barley, and now as fine crops of wheat are grown as can be found.

And you may depend upon it, that in whatever district in this country turnips are grown to any extent, there you will begin to see the land increasing in fertility. It is a crop that *demands* such cultivation to be grown successfully, that the land and other crops will feel the benefit of it throughout the rotation, and then the farmers' motto will be the same as mine, viz:

"More roots, more stock;—more stock, more manure;—more manure, better crops."

What is the difference between a toad and a toady? One loves little bugs and the other big bugs.

PRIZE ESSAY ON MUTTON SHEEP.

BY JURIAN WINNE, ALBANY COUNTY.

The Breeding, Management and Feeding of Mutton Sheep.

SELECTION OF THE BREEDING FLOCK.—In selecting a flock of Long Wooled sheep, choose only nice straight even Ewes, with a broad chest, a round barrel, broad across the hips, standing straight on their legs, &c. Let your ram also be perfect in all his parts—a small head, straight, and rather long ears, a lively, bright eye, broad across the shoulders and breast, straight and even across the back, round in the barrel, full in the hams, holding as near as possible the same width from shoulder to rump, and well wooled over and under, though not too close for mutton sheep.

If the flock is to be bred for mutton and wool only, it matters not much (for one cross, and *one cross only*) what the ewes are, provided they are not little Merinos; as I have had lambs that were dropped by small inferior ewes by a thorough-bred Leicester ram, able to compete, as far as weight and wool were concerned, with those from thorough-bred mothers. As illustrating this point, I recollect an instance in which I came into possession of a lamb got by my thorough-bred ram out of a small ewe, which, in good condition, would not weigh over 120 lbs., live weight; and this lamb, at one year old, sheared twelve pounds of clean, washed wool, and, at three years old, weighed 337 lbs., live weight, and dressed, over 200 lbs. of mutton.*

MANAGEMENT IN BREEDING.—The ewes should be in good feed for two or three weeks before putting the ram with them. Have the ram also in good thrifty order, feeding him for two or three weeks previously from one pint to one quart of oats, or oats and corn, or peas, per day. Tag the ewes, and do not leave the ram with them more than twelve hours out of the twenty-four. Keep both ram and ewes well through the winter by feeding not only hay, but also a few roots and a little grain if necessary every day.

Ticks.—Examine them and see if they have ticks, and if they have, get rid of them, for they will injure the sheep very much before spring, both in their wool and condition. If you have no better remedy, use a little Scotch snuff, or tobacco dust (which is much cheaper and just as effectual,) sprinkled in their wool—it will not injure them in any weather. If they have many, it it will be necessary to repeat the sprinkling in two or three weeks, as then the progeny will have come out, and this will finish the insects for that winter.

Shelter, &c.—Treatment of Colds.—Have good sheds, with small yards attached for good weather, but do not allow them to get wet in cold weather under any circumstances, as one wetting to the skin, when it is cold, will reduce them more than you can replace by good feeding in two weeks. Give them plenty of clean bedding at least once a week, and oftener if necessary. Let them have access to pure water at all times, and have it, by all means, right in their yards. There should

*As matter of interest I subjoin a statement of what, at current rates, based upon amounts of food actually consumed, would be the account current with this cross-bred lamb:

First year's	pasture, seven months,	$1.00
do.	grain (oats) at $1 per bush.—1 pint per day nine months, 4½ bushels,	4.50
do.	hay, six months, 1 lb. per day—180 lbs. at 1¼c. per lb.,	2.25
do.	roots—4½ bushels at 25c.,	1.13
Second year's	pasture, $1.50—grain, $6—hay, $3.37—roots, $1.50,	12.37
Third year—same items as second year,		12.37
Fourth year—pasture, $1.50—grain to Feb. 1st, 4 bush., $4—hay to Feb. 1st, $1—roots to Feb. 1st, $1,		7.50
	Total value of food consumed,	$41.12
First year's wool clip, 12 lbs. at $1,		$12.00
Second do. do. 10 lbs.,		10.00
Third do. do. do.		10.00
Sold for—337 lbs. live weight at 12c.,		40.44
	Total receipt, being a profit of $31.32,	$72.44

also be a box, with salt in one end of it, and salt and wood ashes in the other, in the yards, and *never suffered to get empty*. Feed occasionally a little browse, pine or hemlock; or, if this cannot easily be obtained, add a little rosin or nitre to their salt about once a fortnitght. Smear their noses with tar at least three times in winter, and three times in summer—in summer immediately after shearing, as that will help to prevent their taking cold; about the first of August, as at that time, flies are very troublesome, and the tar will keep them away; and then again about the middle of October, which is about the time they should be tagged and the ram put with them. In winter—when you bring them into the yards; again about the middle of January, and the third time, in March. And if any of them have foul noses at any time, put on the tar; and, if they have a cough, put some into their mouths also every few days, as this course of treatment, with me, soon results in cure.

Lambing Time.—Three or four weeks before lambing time, increase your grain and decrease your roots, as the latter in too large quantity, are apt to cause too large a flow of milk and injure the udder; while, with too little grain, the ewes are not strong enough at lambing. During the season of lambing, they should be watched very closely, and assisted a little—very carefully, however—if necessary. Be sure that the lamb nurses a little after an hour or two; and if the ewe, as is frequently the case with young mothers, is not disposed to let her lamb suckle, hold her a few times while the lamb is nursing, and this will generally remove all difficulty in the future. If lambs come in winter, the ewes should be in a dry, warm place, with plenty of clean litter.

Spring and Summer Treatment.—When the lambs are about four weeks old they are to be docked, and castrated if the latter is to be done at all, as at this age I never knew them to suffer in the least from the effects of it. Poor pasture and cold storms are ruinous to both sheep and lambs—therefore do not turn them out too early, and continue a little grain for ten or fifteen days after turning out, or until they have plenty of good pasturage. In summer they should have a field with plenty of running water, and a few shade trees if possible, and if it is a little hilly, so much the better. If the grass at any time scours either the sheep or lambs, tag them as soon as they are better of it, as such ones will sometimes get maggotty and die if neglected. About the middle of August wean the lambs, removing them as far as possible from their mothers, as both will quiet down much sooner if they cannot hear each other. The lambs should be put on the best feed attainable and, the ewes on the poorest; and, after a few days, examine the latter, and if their udders are hard or caked, milk them out and rub with a little sturgeon oil or arnica, either of which will not only soften the udder, but also dry up the milk. As soon as the ewes are all right in this respect, put them on good feed again to recruit for winter.

Wintering the Lambs—Yearling Wethers.—Two or three wethers or dry ewes should be put with the lambs when they are weaned, to keep them tame; and, if the feed is not of first quality, give them daily a few oats, and the old ones will soon teach the lambs to eat the grain. About October 1st, separate the ram and ewe lambs, and keep them separate from that time until the next shearing, unless it is desired that the ewe lambs should breed, which I consider very bad policy, and never under any circumstances allow.

Continue feeding a little grain to the lambs all through the first winter, and until about shearing time, when it should be omitted altogether. After harvest such yearlings as are to be fattened the first winter may begin to receive a little grain; and I have found by experience that this is the most profitable time to prepare them for market, all things considered. When winter sets in, slowly increase the quantity until it reaches one quart per day for each sheep; and, with a good breed and good management, yearling wethers can be made, as I have repeatedly done, to weigh from 190 to 240 lbs. live weight, and dress from 100 to 140 lbs. of mutton before they reach two years old. The result, at present prices, I compute as follows:

Money Return.

Say 200 lbs. live weight at 12c., is	$24.00
First clip of wool, 10 lbs.,	10.00
	$34.00

Cost of Raising and Fattening.

Pasture first season, about	$1.00	
Grain, the first year—say 5 bush. oats,	5.00	
Hay, first winter, 150 lbs. at 1¼c.,	1.87	
Pasture, second year—say	2.00	
Feed second winter—4 bush. oats and oil-meal,	5.50	
Hay, second winter, say 200 lbs.,	2.50	
		17.87
Balance to credit of sheep,		$16.13

The Selection and Purchase of Feeding Sheep.—In what has been said so far, I do not overlook the fact that a great many of our feeders depend on buying a majority of the sheep they fatten. The proper selection of feeding animals is an all-important point. Although experienced feeders can tell pretty well by the eye, yet even with them the eye is sometimes mistaken, and I consider it much more accurate for both the experienced and inexperienced to handle the sheep when buying. This course, with but little experience, leaves no room for mistakes. It is often the case, moreover, that feeders, instead of going themselves or sending some competent person where the sheep are raised, to buy and handle them, simply buy at Albany, Buffalo, or other markets from the drovers—a mode of purchase open to serious objection, for the reason that such sheep frequently do not feed well, owing to the bad handling or harsh treatment to which they may have been subjected. While in Canada once to buy sheep, I recollect meeting a man on horseback driving a flock before him with two dogs—the horse on a smart trot, the dogs chasing, and the sheep with their tongues out panting for breath. On learning from the man, in answer to a question, that he was taking them to market, I told him that he was doing them a great injury; "not a bit," he replied, and trotted away, but I very well know that I would not willingly be the man to undertake the feeding of those sheep. Sheep *must* be selected and handled with great care; they should be driven very carefully, and not over ten miles a day. Then, if they are to be shipped on the cars, which they always should be, if possible, in preference to driving them a single mile unnecessarily, they should not be loaded until they are perfectly cool, and never under any circumstances when their wool is wet. They should never be over-loaded; from 60 to 100 according to size, are as many as a single deck can accommodate. The danger in over-crowding is very great—both of their heating and of losing some of them. I have frequently seen half-a-dozen dead ones pulled out of a car load, all lost on account of over-loading.

Treatment on Arrival.—When the sheep are brought home and rested over night, the first thing to be done, according to my practice, is to smear their noses well with tar; they will then throw off all cold or dust from their heads contracted during the journey. The next thing is to *size them properly*—that is, if I had brought home five hundred sheep, I should first select out one hundred of the largest and best ones, and send them to the best pasture I had or could get for them. Then I would draw out the hundred smallest and poorest ones. If the aim in buying has been, as it always should be, to get nothing but good ones, the remaining three hundred will be a pretty even lot, and can be separated to suit the pastures, always remembering, however, that the smaller the number of sheep and the larger the pasture, the better they thrive. Give them plenty of salt twice a week, and keep them on good pasture if possible, but if the pasturage gets short as it frequently does by the first or middle of November, a little grain should be fed, beginning at the rate of one gill to each sheep per day of oats, or oats and corn, or peas, and increasing after the first week gradually up to one pint per day.

The Yards and Stables.—It is very bad policy to wait until snow comes to get the yards and stables ready. By commencing early, and, if there is a saw-mill near at hand, by hauling into the yards and stables four or five inches of sawdust, the stable floors will not only be saved, but the liquid manure from the sheep is also preserved, making a very valuable addition to the compost heap, especially for heavy land. As soon as the trees shed their foliage, rake and haul in on top of the sawdust, leaves to a depth of five or six inches more, and the two will together make plenty of bedding for at least four weeks by stirring up the leaves a few times. With the present price of straw ($25 per ton) a month's bedding saved is worth looking after, aside from the probability that all the straw may be needed before spring, even after taking this precaution.

The above preparations over with, the feeding boxes should be taken out at leisure, and cleansed by sprinkling the inside with slacked lime—thus removing al

that greasy smell which there would otherwise be about them. Put them where needed, upside down, and when the snow comes, there will be nothing to do but turn them over, straighten them up, put in the feed, and let the sheep come. I mention such details, because I have found by experience so great advantages in being ready in time, instead of waiting till the snow has fallen, with the sheep standing and lying in it, and exposed to the storm for twenty-four hours or more, until the shelter is prepared.

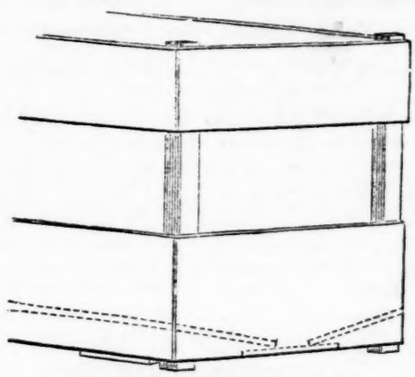
As already stated, as soon as yarded, the sheep should have their noses smeared with tar. The water arrangements are next to be perfected, if not already done—one trough or tub in each yard or shed, accessible to the sheep at all hours of the day. The salt boxes constantly within their reach, contain salt at one end, and salt and wood ashes at the other, in the proportion of one part of ashes to two of salt.

Properly Regulating the Feed.—By feeding liberally with roots and not too much grain, during the first week at least, the change from green feed to dry will be less apt to affect the sheep. In feeding, unless a person can do it himself, which is very seldom the case, the feeder should be instructed with great care, how much grain is to go to each yard or stable according to the animals it contains. An over-feed at the commencement is almost sure to bring on the scours, and after they are over it will take at least two weeks' good feeding to put the sheep back where they started from. My mode, to avoid mistakes, is to number my yards and stables, and count the sheep in each yard and stable—allowing to each sheep one-half pint of grain per day to start with, unless they have been fed grain previously, when I allow a little more. I then make out a schedule, thus: No. 1—60 sheep at one-half pint per day is 15 quarts, which divided in two feeds is 7½ quarts to a feed; so I write on the schedule "No. 1—60 sheep must have 7½ quarts at a feed morning and night"—No. 2 at the same rate according to number, and so on until I get them all. This paper is tacked up in the place where the feed is kept, and by going with the feeder a few times to show him and see that he makes no mistakes, if he is a good man he can do it as well as the farmer himself. As soon as the feed is to be increased, a new schedule is made out accordingly, and so on, until the sheep are fed one quart each per day, when I consider them on full feed, especially if the feed is corn, beans or oil meal, or a mixture of either. If oats or buckwheat compose part of their feed, they should have a little more.

Feeding Boxes.—In these times of high prices for hay, grain and labor, the right kind of feeding box or rack is all-important. Having seen several different kinds not only in this State and in Canada, and I hope without being prejudiced in favor of my own, I have nevertheless been unwilling to abandon it for any other, for use with fattening sheep. It is simple, cheap, and easily filled and cleaned. Any boy who can saw a board and drive a nail or screw, can make one; all it requires is one scantling two by three inches, 15 feet long, and eight boards; it only has to be turned upside down and back again to clean it out, and as the feeder with his basket of grain or roots walks from one end to the other, scattering them along evenly in the box, twenty or twenty-five sheep according to size will follow in his rear and begin eating. Moreover, there is a saving of hay, as they stand with their heads together working it into rather than out of the box, and I am fully confident that in feeding 800 sheep last winter, I did not lose altogether 400 lbs. of hay. For breeding animals I have seen boxes which are preferable; one sent me by a friend and others made after it, excel in avoiding entirely the rubbing of the wool on the sheeps' necks—but with fattening sheep this amounts to nothing.

Regularity in Feeding.—Regularity of hours is very important. Sheep should not be fed one morning at five o'clock, the next at six, and the third at seven. The day I write, owing to the illness of one of the boys, I have had an example in point; on going out at five, a board was found off at the stable, and an end out of one of the feeding boxes. To replace these was a job of some time, and the grain only had been fed when the breakfast bell rang, leaving the sheep without their hay. I remarked to my man that this mishap would cost us "all the day's feed," which I verily believe to be the case. Our rule is this:

Grain and oil meal are fed at half-past five A. M. As soon as the grain is finished hay is given—no more than the sheep will eat clean. The different yards and stables



Description of the Feeding Box.

Feeding Box 12 or 14 ft. long, and 22 inches wide—the bottom slanting from both sides and resting on a board in the middle, forming a complete trough for grain or roots. The bottom side board should be 11 or 12 inches wide—then a space left of 8 or 10 inches according to size of sheep—then the top board, 8 inches wide—the ends and sides to match. Corner pieces of scantling in the inside, of hemlock or oak, as pine will not hold a nail or screw, the latter of which is preferable in putting them together.

are carefully fed each day *in the same order*, which is important to avoid confusion and mistakes—beginning with No. 1, and so on through the list. After breakfast water is given, going around twice to see that all are well supplied. The roots are next cut (ruta bagas, which I consider best,) and of these to my present stock of about 350 sheep I am now feeding 10 bushels a day. At eleven o'clock straw is fed. Twelve is the dinner hour, and immediately after dinner the roots are fed. The troughs and tubs are now all examined, and replenished with water if necessary—also salt, salt and ashes, browse, litter, and anything else that may be needed is supplied. The evening and next morning's feeds of grain and oil meal are next prepared, and hay got ready for both night and morning. At 4 P. M. feeding the grain is again commenced, followed as before by hay, after which the water tubs and troughs are emptied and turned over, and the work is finished for the night.

Avoid Disturbing the Sheep.—Never allow a stranger into the yards unless accompanied by the feeder, or some one familiar with the sheep. I have frequently known the approach of a stranger drive them pell-mell into and over their boxes, and the effects could plainly be seen with them for two or three days afterward.

The Stretches.—Should any of the sheep get the stretches which they are apt to do when high fed, give a quid of tobacco half the size of a hen's egg, and if not relieved in twenty minutes, I give them a second dose, but nine times in ten the first dose cures. For stoppage in their water, I give one teaspoonful spirits nitre, with the same quantity spirits turpentine, in half a gill of lukewarm water.

Experiments Illustrating this System of Feeding.—It is very desirable to know with some precision what gain in weight should be counted upon in feeding. I find that with the amount of grain above mentioned, the average quantity of hay consumed is rather less than above one and a half pounds per head per day. When sheep are fed three months, the total quantity of grain consumed I reckon equal to 2½ months at one quart each per day—two months of the three being at this rate, and the first month, which is consumed in getting by degrees up to full feed, not averaging more than one pint each per day.

The following is the result of an experiment tried in 1860, with thirteen sheep, each accurately weighed at the dates specified:

	Weight Jan. 3d.	Weight Feb. 3d.	Gain.
No. 1. Ewe, ...	235 lbs.	253 lbs.	17 lbs.
2. Wether, ...	242	252	10
3. do.	235	250	15
4. do.	226	236	10
5. Yearling ewe, .	202	219	17
6. Ewe, ...	213	237	24
7. do.	188	205	17
8. do.	181	185	4
9. do.	194	215	21
10. Wether, ...	178	193	15
11. do.	194	208	14
12. do.	183	196	13

13.	do.	179	192	13

Total, Jan. 3d, 2,650 lbs. Feb. 3, 2,841 lbs. Gain, 190 lbs.

Here were thirteen sheep, averaging 218 lbs. weight, Jan. 2, which gained an average of 14½ lbs. per head in thirty days. All the other sheep I was feeding were likewise weighed at both the above dates, and I subjoin the figures to show, among other points, that the larger the sheep, as a general rule, the greater the gain, and, in the case of the last lot on the list, how much this gain is reduced by lack of proper shelter, a deficiency in accommodations obliging me to keep these sheep (No. 9 on the list) in a shed upon a large open lot. The system of feeding adopted was the same with all except that the large sheep may perhaps have had a trifle the most:

No. of Lot.	Where Kept.	No. of sheep in the lot.	Total weig't Jan. 3.	Av. weight per head Jan. 3.	Total weig't Feb. 3.	Gain in 30 days.	Av. gain of each.
		Head.	lbs.	lbs.	lbs.	lbs.	lbs.
1.	Stable,.....	13	2,650	204	2,840	190	14¾
2.	do.	18	3,077	171	3,302	225	12½
3.	Open yard and shed,.	83	12,450	150	13,105	655	8
4.	do. .	60	9,153	152	9,513	360	6
5.	Stable,.....	40	6,037	151	6,377	340	8½
6.	Close shed,.....	70	9,592	137	10,042	450	6½
7.	Open yard and shed,.	77	10,522	137	11,106	584	7½
8.	do. .	73	9,913	136	10,407	494	6¾
9.	Shed and open field,	70	8,824	126	9,192	368	5¼

Total number of sheep, 504—average weight Jan. 3d, 143¼ lbs. per head—Feb. 3d, 150½ lbs.—average gain per head on the whole, 7¼ lbs. nearly. As the best lot of thirteen gained in weight twice as rapidly as the average of the whole, the importance is shown of selecting the *very best sheep* in purchasing for fattening.

The account current with one lot of the sheep I am feeding this winter gives a considerably better average increase in weight than the above, and also forcibly illustrates the value of ruta bagas in feeding. This lot of sheep consists of 300 head which reached my farm about Nov. 20th. At that time they were not weighed, but I think I may trust my long experience as often tested by the scales, to say that the average per head would have been from 120 to 125 lbs.—say 122. As to their value, I will not give their cost to me, but 8¼ cts. per lb. live weight, was the outside figure at which they could have been sold on arrival—and this price would have yielded me a very fair profit. As it would have been simply a profit on purchase and sale, and not on the actual feeding of the sheep, it is fairer to exclude it, and give the money value of the sheep at the time of beginning to feed, calculated on the above basis, at $10.07 per head.

These sheep were pastured a fortnight, and I then begun feeding at the rate of one half bushel per day for the 300, at pasture, finally getting up to three bushels per day when snow came shortly after the middle of December. They were then housed, and the feed slowly increased until Jan. 1st, when it reached the full feed specified, of one quart per head per day. It consisted of half oats and half oil-meal up to about this time, (Jan. 20th.) I have now substituted Indian corn for the oats—about 2½ bushels corn unground, mixed with 300 lbs. oil-meal, constituting the daily food of the 300—valued at—

300 lbs. oil-meal, cost me $70 per ton, ...	$10.50
2½ bushels corn, at $1.90 per bushel,.....	4.75
8 do. roots—would sell for 37½ cts. per bushel, but this much exceeds cost of production,....	3.00
1½ lb. per day hay to each, 450 lbs.,.....	4.95
Cost of feeding 300 sheep per day,..... ...	$23.20

Or an average per head of about 7¾ cts. per day.

The sheep are gaining unusually well—a fact which I ascribe to the increased quantity of roots I am feeding them as compared with former years. With your permission, as these Essays are to be handed in on the 26th inst., I will hereafter submit the results with these sheep, and close for the present, hoping that the foregoing details may at least be useful to beginners in Feeding.

As to the value of sheep manure, and the effects resulting from its liberal application, I have never kept much other stock, and I may be permitted to add that twenty-seven years ago, when I came on to this farm, I cut from about 60 acres of land the first year 25 tons of hay. Year before last I cut from precisely the same number of acres, 100 tons, and last year (a season of severe drouth) 90 tons. When I begun on the farm I had one barn 32 by 40 feet, which held all the crops it produced. I now have one barn 44 by 52 feet, 20 feet posts; one shed 21 by 36, 18 feet posts; one 21 by 24, 16 feet posts; one 30 by 72, 18 feet posts, and one barrack that will hold 17 tons of hay. Summer before last they were *all full*. Two rules I laid down, never to lose sight of, when I commenced farming for myself: 1. To deal honorably with mother Earth—that is, to plow well, harrow well, give her all the manure I could, and never sell my straw, but keep it all for the land, and I assure you I could soon see an improvement. 2. Never to buy anything (except manure) I could possibly do without, until I had the money to pay for it—for manure, when it could be had, I was never afraid to run in debt. These two rules I have strictly adhered to, and must attribute much of my success to their benign influence.

Bethlehem, Jan. 25, 1865. JURIAN WINNE.

Appendix.

[About the middle of February we received from Mr. WINNE a statement of the results with the 300 sheep referred to above, which we are obliged to present in condensed form:

Estimated average weight of the 300 at this date, 150 lbs. per head—has been offered 13c. per lb., live weight,.....	$19.50
Total amount of feed, exclusive of pasturage, is considered equal to 60 days' full feed at above rate, to this time—per head, ...	$4.64
Money value, when feeding began,.....	10.07
	14.71
Profit per head, exclusive of attendance, but with no allowance for manure,.....	$4.79

This gain, it should be remembered, is after selling the hay to the sheep, at the barns, at $22 per ton, the corn at $1.90 per bushel, and the ruta bagas at 37½c. per bushel; and, on the 300 sheep, considering the shortness of the investment, the profit is certainly a very pretty one. Aside from any rise in the value of sheep as between autumn and spring, it may also be remembered that every pound of additional flesh put on, adds to the value of the flesh which was there before.]

CORN AFTER BUCKWHEAT.

EDS. CO. GENT.—I see among the inquiries in the CO. GENT. of Feb. 9th, that D. McM., of Delhi, wishes to know your opinion in regard to planting corn after buckwheat. As the idea had been advanced here that corn could not be raised after buckwheat, we concluded to give it a trial.

Some seven or eight years ago, we broke up a piece for corn, and a part of it being very tough, we concluded to let it remain and sow buckwheat on it, which we did, and had a very good crop. The next year we plowed and planted the whole piece to corn, and had an excellent crop, and there was no perceptible difference between that that was planted to corn the year previous and that that was sowed to buckwheat.

We have tried corn after buckwheat several times since; and never have failed in getting a good crop. Now the secret of success may be what Mr. McM. will object to; but as it is the way we do here, on the Chenango hills, I will give it. We don't expect to get a *good* crop of corn without manuring in the hill with hen or hog manure.

The main point in fitting the ground, is to have it well plowed and harrowed; we then mark out in rows 3½ feet apart with a plow, and commence dropping manure, driving lengthwise of the rows, and taking as many as can be conveniently dropped at a time, dropping from 3 to 3½ feet apart in the rows. If hen manure is used, a good single handful to a hill will be enough, and if hog manure, from one-fourth to one-half a shovelfull, according to the quality.

The manure should be covered with about an inch of dirt, and the corn planted on that.

If Mr. McM. tries the above plan and does not succeed in getting a good crop, his experience will not be like ours. M. E. MERCHANT.

Guilford, Chenango Co., N. Y.

Agricultural Education in New-Jersey.

With the numerous institutions in process of organization under the Land Grant of Congress, for the promotion of Education in Agriculture and the Mechanic Arts, the question of what kind of Education is best suited to the wants of our farmers seems likely to find its gradual solution in the actual experience of instructors and pupils.

One of the first schemes of education put forth is that received some weeks since from the "Rutgers Scientific School," connected with Rutgers College, New Brunswick, N. J., to which institution the revenue of the Public Land Fund was appropriated by the Legislature of that State. The terms of the appropriation were that the interest of the fund should be "devoted wholly and exclusively to the maintenance, in that department of Rutgers College known as Rutgers Scientific School, of such courses of instruction as (including the courses of instruction already established) shall carry out the intent of the Act of Congress."

Under this act the Trustees have accordingly purchased a valuable farm but a short distance from the College, and are taking measures to provide also a large Chemical Laboratory for the use of the students in Chemical Analysis, Metallurgy, and Chemistry applied to the Arts and to Agriculture; and for general Lectures in experimental science; an Astronomical Observatory, furnished with all the needed instruments and appliances for practical study; rooms and fixtures for the study of Mechanical and Civil Engineering, Draughting, &c.; and accommodations for a large Museum in which the Geology, Mineralogy Zoology and Botany of New-Jersey can be fully represented and illustrated.

The course of study decided on, with the approval of the "Board of Visitors of the State," includes two divisions—embracing I., Civil Engineering and Mechanics, and II., Chemistry and Agriculture. It is designed that each of these courses should occupy three years—the studies of the first year, which are to a great extent preparatory in their nature, and many of those included in the second and third years, being common to both courses. These branches are equally necessary to a practical education for the civil engineer, the head-mechanic, the architect, and so on, and to the educated farmer—comprising the rudiments and practice of chemistry and chemical analysis, chemistry as applied to the arts, land and topographical surveying, architecture and draughting, mechanical philosophy, machinery and hydraulics, geology and mineralogy, botany, vegetable and animal physiology, the French and German languages, with some instruction in the more general subjects of history, political economy, &c., and military tactics as prescribed in the Act of Congress. The arrangement of these studies by terms, we need not give, but with the second term of the second year the agricultural course, strictly speaking, begins, as to which we copy the following schedule:

THEORY AND PRACTICE OF AGRICULTURE.

OUTLINE OF THE COURSE.

Instruction in the Theory and Practice of Agriculture will be conveyed for the present mainly by Lectures, except where suitable text-books can be obtained.

Opportunities for observation upon the College Farm will be given from time to time, and we hope to secure ere long, a cabinet of specimens and models by which the Lectures delivered may be illustrated and exemplified. During the Terms mentioned below, the following subjects will be treated:

I. Second Term, Second Year:—Agriculture, its *Principles.*
Its development and present condition as an Art.
Its connection with the several branches of science.
The economic requisites of vegetable growth, including soils, and the theory of manures.

II. Third Term, Second Year.—Agriculture, its *Processes.*
Tillage; plowing; the physical manipulation of the land.
Implements and Machinery.
Drainage, Irrigation, etc.
The Practice of Manures.
Farm Buildings—their construction and arrangement.

III. First Term, Third Year.—Agriculture, its *Products.*

1. *Farming and Farm Crops.*

The cereals, their cultivation, and management and uses.
Hemp, Flax and other commercial crops.
Root Crops and the Legumes.
Grasses and the care of Pasture Lands.
Rotation of Crops, and the use of Artificial Fertilizers.

IV. Second Term, Third Year.—*Products continued.*

2. *Animals and Animal Products.*

The Principles of Breeding and the various Improved Breeds.
The care of Domestic Animals and Fattening for Market.
Dairy Management, including Milk, Butter and Cheese.
Animals of Draught.

V. Third Term, Third Year.—*Products continued.*

3. *Horticultural Products and Rural Embellishment.*

The Orchard, including the Nursery propagation of Trees.
The Market Garden; forcing of plants and fruits.
The Vineyard; manufacture of wine, cider, &c.
Ornamental Trees and Shrubs, Landscape Gardening.

Either during the First Term of the Second Year, or subsequently, the study of Book-keeping will be continued with special reference to *Farm Accounts*, which is believed to be one of the most important branches of study, and opportunities of practice will ultimately be afforded the students in keeping the accounts of the College Farm. The study of *Botany* will also be continued with direct bearing upon the plants, useful or injurious, which the farmer most frequently meets. Some attention will also be given to *Entomology*, either as a separate branch, or in connection with those Farm and Orchard products which suffer most from insect depredators.

The lectures of the different terms are adapted as far as possible to the seasons when they can best be practically exemplified.

For College Graduates and other advanced students who may wish to take a one year course in Agriculture only, the lectures will be so arranged that such students can attend a double course during two-thirds of the year, thus:

1st Term—The Lectures numbered					III.
2d	do.	do.	do.	do.	I and IV.
3d	do.	do.	do.	do.	II and V.

If we correctly understand the views of the Trustees in adopting the foregoing outline, it is their design to appoint a Professor of the Theory and Practice of Agriculture, under whose charge the different series of lectures above referred to will be arranged, and who will personally attend to such portion of them as his time and acquirements may permit; and that qualified and experienced associates shall be secured, who will deliver lectures, during the several terms, upon the special subjects in which they are particularly fitted, from long and extended practice, to convey instruction of the greatest benefit to the pupils. These will be men engaged in other avocations, who could not be induced to abandon them, but who could devote a term, or part of a term, in each year, to lectures upon their respective specialties—thus enlarging and strengthening the college corps of lecturers much beyond the practicable limit of its means if all were permanently members of the Faculty, while at the same time enabled to give precisely the sort of information required by students. It is thought, moreover, as above indicated, that a course embracing these lectures, with perhaps some other of the more important branches of study, may be easily adopted, to necessitate but one year's attendance, and designed to meet the wants either of that class already versed in the preparatory branches on the one hand, or of farmers more advanced in life, on the other, who would be unable to devote three years to a completer education, but who could doubtless derive great advantages from

thus spending a single twelvemonth associated with others in the constant discussion of agricultural questions, as well as in noting down the facts and principles enunciated in the lecture room.

We place this outline thus prominently before our readers, not only that they may keep pace with the movements of such institutions, but also because if it shall elicit suggestions from practical men, or tend to show how such a course will be received by the agricultural public, the originators of this plan may be the gainers thereby. In Agricultural Education, as well as in that of any other kind, we are compelled to start with a proper foundation; there are rudiments of science in its various branches, with which the student must be thoroughly versed, before he is really competent to proceed farther. He cannot, for instance, learn to survey a field without some previous knowledge of mathematics; he cannot exactly determine the merits of an implement without knowing something of the strength of materials and the principles of mechanics; he cannot avail himself in practice of the teachings of the chemist, or detect the spurious claims and false theories of pretenders, without being conversant to some extent, with chemistry itself. Such preliminary demands the foregoing course seems fully calculated to meet.

Having advanced so far, he is very much in the position of the college graduate about to undertake the study of law, and already educated (so far as colleges complete the education they begin) in literature, the ancient languages, &c., and practiced in the habit of mental application. The law school conveys a general knowledge of that science, in its various branches, the theory and principles on which it rests, and a condensed summary of its results in practice. In the moot court, the student obtains some experience as to the application of what he hears, and still more in the wider field of observation furnished by the practice of the courts themselves, as he is able to attend them. He is prepared to commence practice himself, not only by the information acquired, but also by the discipline of study, and an acquaintance with the authorities to which he may turn for farther investigation. In an analogous manner, the course above laid down for the agricultural student, is suited to place the development of this art and a knowledge of its present position, before him—its principles and the writers whose works he may consult; and its practice, so far as this can be laid down in words. The discussion in clubs or societies, of agricultural questions involving the teachings of instructors, together with the observation of what takes place on the college farm, supply very nearly what the law student has in the moot court, while visits from time to time with leading farmers in the vicinity, illustrate for the one, what the other seeks by visiting the halls of justice.

Such an agricultural course, therefore, appears to be at least a practicable beginning, out of which, as developed by farther experience, we trust may at length grow that fuller and better education for the farmer so long hoped for and so ardently desired.

The Maine Farmer.—Dr. N. T. TRUE of Bethel, Me., succeeds the late Dr. HOLMES as editor-in-chief of the Agricultural Department of this excellent journal, and with the efficient aid of Mr. S. L. BOARDMAN, so long associated in its management, can hardly fail fully to maintain its interest and usefulness.

Fig. 1.

Fig. 2.

Triangular Harrow.—Will you give your opinion of the value for stony ground, of a harrow made according to this cut, (fig. 1.) I have heard them highly spoken of, but would like your opinion before making one. The square harrow does not suit me on very stony ground. If you are acquainted with this form, please give the size of timbers and

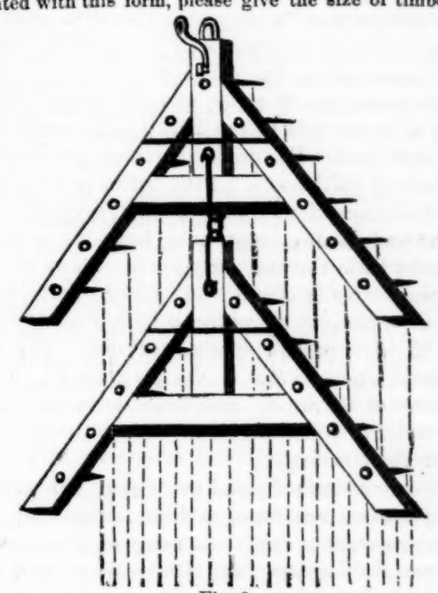


Fig. 3.

length, and arrangement of teeth. I wish about twenty-four one-inch square teeth. I suppose the strip A. is bolted to the others. Should the middle timbers extend beyond the dotted line B? ST. L. [Where there are frequent large stones and other obstructions, the pointed harrow like this will pass around them with much greater facility than the square harrow. The second timbers may extend beyond the dotted line B. If the surface of the ground is quite uneven, the Geddes harrow, (fig. 2.) with wings turning on hinges in a line parallel to the line of draught, answers an excellent purpose. Hanford's harrow (fig. 3.) has the front and rear parts both solid, with a joint or clevis between them, and fits itself better to uneven ground when crossing ridges or hollows, while the Geddes implement adapts itself better to the surface when running parallel with them. The timbers, if very tough, may be 2½ by 3 inches, or 3 inches square—otherwise 3 by 4 inches.]

New-England Agricultural Society.—The Annual Meeting of this Society was held March 2d. The Treasurer's Report showed unpaid bills, $2479.54, on account of the Springfield exhibition, which were at the expense of the guarantors, and will leave $1300 of membership fees still in the treasury. A nominating committee of two from each of the six New-England States was appointed, who reported the following list of officers:

President—Hon. GEORGE B. LORING of Salem, Mass.

Vice-Presidents—S. L. Goodale of Saco, Me.; Frederick Smyth of Manchester, N. H.; Henry Clark of Poultney, Vt.; T. S. Gold of West Cornwall, Conn.; Amasa Sprague, Cranston, R. I; William H. Prince of Northampton, Mass.

Secretary—Chas. L. Flint, Boston.

Treasurer—Isaac K. Gage of New Hampshire.

Also five trustees from each State. The constitution of the Society was amended to provide for the election of an assistant secretary and assistant treasurer to be residents in the State in which the Annual Exhibition may be located. On motion, the trustees were empowered, if in their judgment they deemed it proper, to hold an exhibition next fall.

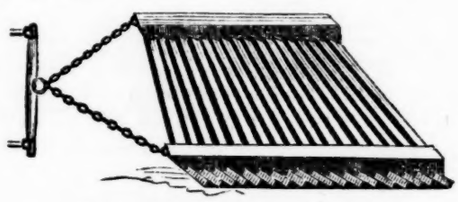
Thorough Stirring and Pulverizing the Soil for Hoed and Grain Crops.

MESSRS. EDITORS—For the most successful raising maximum farm crops on the long cultivated soils of New-England, a thorough stirring and pulverization of the soil seems to be one of the necessary conditions. In the early settlement of the country, before the original fertility of the land had become greatly exhausted by long years of continuous cropping, and before the vegetable matters of the soil had become used up, good crops of corn, grain, roots, and hay, could be grown by skimming over the surface of the land with the wooden mould-board plow, which was followed, for the grain crop, with the triangular harrow with is wooden teeth. But in process of time, it was found that these primitive implements did not answer the purpose in preparing the exhausted and heavier and more compact soils for growing paying crops of corn, grain, &c. So these old time plows and harrows have passed away, and an almost endless variety of newer and more efficient implements have been substituted. Hundreds of plows and harrows, and scores of cultivators, for the better preparing the land for the reception of the seed, and greater ease of working and hoeing crops, have been invented and patented within the past forty years. Many of these have proved really useful and efficient implements, while, as a matter of course, others, when tried in the field, have proved nearly worthless. But upon the whole, such has been the progress in the improvement of our farm implements, even within the past quarter of a century, that their intrinsic money value to the farming interests of our country cannot well be over-estimated; and every year, new and useful implements are brought into notice, and valuable improvements made on many of those having been previously in use; this latter statement is peculiarly applicable to many of the reapers and mowers of different patterns and patents.

And here, Messrs. Editors, I beg leave to notice several farm implements not generally known, or, as yet, much in use among our farmers. I would farther say I have no personal interest to subserve in this matter, pro or con; but I will simply give a "plain, unvarnished statement," of such of them as I have used and found useful on my farm, and I have no doubt they would be found on trial, equally so, on thousands of other farms.

Shepard's Land Leveller.

The first is an implement invented and patented by Robert Shepard, one of the elders in the Society of Shakers in Canterbury, N. H. It is called by him a "land-leveller," and he might safely add, "and pulverizer," for it does both "level and pulverise" the newly plowed ground very nicely, and fast, too. The leveller, in form, is triangular; at the front part it is two feet wide—about seven feet wide at the rear end, and six feet long; joists, four inches square, are sawed diagonally, that is, from corner to corner; this leaves the joist triangular, or three square; there are four of these placed about eleven inches apart, like ribs on the rafters of a building; the rear joist is seven feet long—front one two feet long—the two middle ones' lengths to correspond—the flat sides of the ribs forward. One inch boards are nailed to the top side of the joists, after which the joists are sawed in the middle, and then the two parts are hinged, precisely like the Geddes harrow. It is drawn either by a horse or oxen, the same as a harrow, on old or stubble ground; I draw it crosswise the furrows, each rib taking up some of the soil and dropping it in any hole or hollow. Once or twice crossing the plowed land fills up the dead furrows, and leaves the ground level. It does not requre half so much harrowing to prepare the ground for sowing the grain as it does when the harrow is directly applied to the furrows. On inverted sod, I have the leveller drawn lengthwise the furrow. It fills up all interstices between the furrow slices, and leaves the ground in nice order for carting on and spreading the manure. When a farmer does his mowing by horse power, it is a matter of much consequence to have a smooth, level surface to mow over, and the use of this leveller does much towards effecting this desirable purpose. Much more might be said of the use of this implement, but I forbear. I should be very loth to be deprived of of its use on my farm. It is a cheaply made affair. I do not, however, know its exact cost. Perhaps Mr. Shepard would find it for his interest to advertise in the CO. GENT.



Cumberland Clod Crusher.

Another useful and cheap implement I have used, is known in England as the "Cumberland Clod Crusher." A plate or figure representing it, with a description, &c., I saw in the London Agricultural Gazette, a number of years ago. The writer said, "It is so easily constructed that any carpenter can make one. They cost 30s. to 40s., according to their size, and the quality of the wood employed. Perhaps the best size is six feet square. For this size, two, three, or four horses are used, according to the state and character of the soil, and the weight applied." This crusher, it was stated, was more effective in clod crushing than the vastly more expensive Crosskill's crusher.

From the description and plate, I made one of these crushers last year, and find it a very efficient implement, and will attempt to describe it.

I used two inch, seasoned, second growth red oak plank, eight inches wide. I took for the sides two pieces of the plank about five feet long each, on one edge of which, every seven inches, I sawed down two inches, scarped from the saw-cut back seven inches, so that the edge of the plank presented an appearance similar to the teeth of a saw-mill saw. The bottom of the drag was made of plank, eight inches wide, and four and a half feet long, spiked on to the side pieces, so that when completed the bottom part resembled clapboarding. The forward plank slopes high up to the top of the sides to prevent the soil from dragging. The crusher is drawn by a chain made fast to the forward end of the side pieces.

The English statement says it can be made at a cost of 30*s.* to 40*s.*—that is from $7.50 to $10. The plank

for mine cost 50 cents, and I made it in less than half a day. If I had taken it a mile to a shop where there are circular saws, I would have made it in two hours. Beside the plank, I used 28 five inch spikes. However, the English crusher has strips of hoop iron nailed upon the wearing edges of the plank, so as to prevent chafing, which probably is a good plan. The weight of mine, when completed, was 220 pounds, and a pretty good load for one yoke of oxen to draw over the newly turned furrows.

The last of August, I turned over a field of timothy sod land. In consequence of the severe drouth we had, the land did not plow so well as if it had been moister. I put on the crusher and after going over the ground, it looked almost as smooth as a new sown onion bed. The manure was carted on and spread, and the crusher again passed over, which ground the manure very fine and even. The land was then well worked with a heavy cultivator, wheat sown and then harrowed. On a portion of the field I again used the crusher, and on the other a roller. The wheat came up and grew finely, and when the snow came it was altogether the best looking and evenest piece of winter wheat I have ever seen. I also find it a capital thing to press down the snow about my buildings, and breaking out roads, &c.

It is my impression, that this crusher is a much more efficient pulverizer of a hard lumpy soil than a common roller. In the Co. GENT. of April 21, 1864, Old Hurricane gives us his experience in preparing his land for a root crop. The land was plowed in the fall, and twice in the spring, and four times harrowed to fit it for turnips—"then drills opened and heavily manured in drills, and after the seed was sowed, will you believe, it took two men nearly two weeks with mallets, to break up the lumps, and the lumps were so hard that it took four to five hard blows to break them," and the crop proved a failure. Now I think if O. H. could have gone over his lumpy soil two or three times with this Cumberland crusher, his lumpy land would have been reduced to a fine tilth with less than one-quarter of the labor he expended, and that he might have grown a fair crop of turnips.

As there is no patent right about this crusher, each and every farmer that wishes, can make and use it, without 'let or hindrance.'

Nutting's Root Cleaner and Cutter.

The scarcity and high price of cattle feed this winter, in most sections of the country, we think will stimulate many farmers to go more largely into the culture of roots hereafter. One serious objection in the minds of many farmers, is the labor of cutting the roots fine enough to feed without risk of the stock getting choked. To cut up a hundred bushels of roots with a shovel or spade, is no trifling job, as the elbows of myself and grandson know by practical experience. Having got sick of this mincing turnips for my sheep and cattle, I sent express to R. Nutting, Esq., Randolph, Vt., to forward one of his "Root Cleaners and Cutters," which arrived in due season, and we have had it in operation for some weeks, to the entire satisfaction of all parties concerned, both in the house and in the barn. The root cleaner is a valuable addition to the cutter, as the soil sifted from the roots testify. I do not see how the cutter can be much improved.

We are looking with much interest for the appearance of the Premium Esssays on the Culture of Turnips, in the columns of the Co. GENT. This machine of friend Nutting's, we think will remove much of the objection to the culture of roots for cattle feeding, in the minds of all those who may be so fortunate as to provide themselves with one of them, for they are efficient, durable, self-sharpening, and there is little liability of an animal becoming choked in eating the minced roots.

The Universal and Conical Plows.

The improvements in plows have kept pace with most other farm implements. Of the great numbers I have examined, I think, on large farms, the "Universal Plow" with its dozen different mold-boards, adapted to all kinds of plowing—deep or shallow, wide or narrow, flat or lap furrows, smooth or stoney land, &c., comes nearer perfection than any other pattern I have ever seen or used. The patterns for the various parts of the plow were made under the special supervision of Ex-Gov. Holbrook of Vermont, the bare mention of which is a sufficient guarantee of its being a No. 1 plow.

But it is a heavier plow than many farmers would like who only keep one yoke of oxen and a horse, because such farmers wish to do their plowing with their own team. There are great numbers of plows intended for such a purpose; among these is one manufactured (and patented) by Solomon Mead, of New-Haven, Ct. Samples of these were on exhibition at the New-England Fair, Springfield, Mass., last October. Dr. Holmes, of Maine, thus speaks of them—"Among the thousand and one other plows of all sorts and sizes and patterns, we notice one new to us, invented and exhibited by Solomon Mead, of New-Haven, Ct., called the Conical Plow. The concave or turning surface of the mould-board is made to fit or *fay* (as a farmer would say,) to the surface of a cone—the broad end of the cone supposed to be in front. The theory is, that this form gives an easier separation, and a more gradual elevation to the furrow slice at the first start, while the decreased size of the cone, and increased curvature of the mould-board, insures a perfect turning of the furrow, the rapidity of the turning being increased at the last end where the power is diminishing."

Mr. M. claims that his plow is constructed upon correct mathematical principles, and gives several reasons why farmers should use the Conical Plow.

Last fall I procured a No. 6 plow, suitable to be drawn with one yoke of oxen and a horse, for plowing greensward. I found it a very good plow for that purpose, as also for stubble ground, and also for ridging or turning two furrows together. In plowing corn-stubble, plowed about eight inches deep, and fifteen inches wide, completely inverting the soil, and well pulverizing it. I think the plow is well worthy the patronage of farmers. He manufactures several other sizes, all of which are moulded upon the same principle. Mr. M. can convey through the columns of the Co. GENT. (in an advertisement,) to the readers of that paper, a much better idea of its claims than I can give. At the New-Haven Co. Society, 1863, the Conical Plow received two first premiums, viz.: for best work, and best plow.

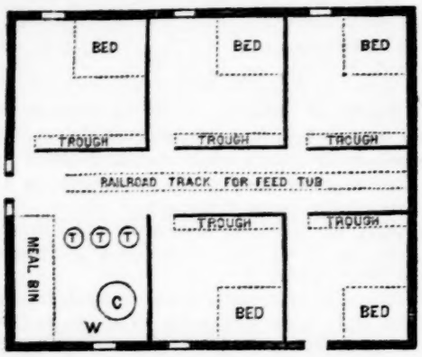
Corn Marker, &c.

The Co. GENT. of Jan. 12, gives us a description of an Improved Milking Stool, with illustrations. The young man who does the milking of my cows, has made one as described, and is very much pleased with it, but I am not sure as the wearers of crinoline would be. We do not think "Rusticus" has overrated the good points of his "improved milking stool." For his timely notice, he has our thanks.

In the Co. GENT. of May 5, 1864, we find an engraving and description of "Todd's corn-ground marker." One of our young farmers fitted up one last spring, and used it for marking out straight rows for his corn, potatoes, &c., and was highly pleased with its operation, finding it far perferable to his old three-toothed horse-rake marker. Some farmers open hills for their corn with a hoe, without any guide but their

PLAN OF A HOG-PEN.

EDS. CO. GENT.—In answer to your correspondent of Richland Co., Ohio, I send the following plan of a hog-pen, which I propose building myself next summer. If you think it worthy of publication, the pub-



T. T. T., Tanks—C. Prindle's Ag. Cauldron—W. Wood.

lic are welcome to it. The building is 36 by 30—which, after taking out four feet for the alley through the middle, and two more for the troughs, will leave six spaces 12 feet square, capable of accommodating 8 or 10 hogs each. One of the six is appropriated for a cooking apparatus, called Prindle's Agricultural Cauldron, made in Rochester, N. Y., and for sale in all large cities. Have used one for two years, and would not be without it. The food can be led by a spout from the tanks to the feed-box on a car. The troughs are one foot wide by 8 or 10 inches deep; and in front of each trough is a ladder-like arrangement, with spaces 12 inches wide between each round, for each hog to put his head through to eat; (hogs when weighing 250 or 275 lbs. can easily eat through a twelve inch space; if heavier than this, would probably need more room.) This plan I have tried for some years and find it does well, preventing all fighting during feed time, and giving the weaker ones an equal chance with the stronger. On each ladder is swung a trap-door, which may be fastened down with a bolt or button, to keep the hogs out until the feed is in the trough. In the corner of each enclosure is a box made seven feet square, and about seven inches high, for them to lay in, in which, if straw is put, they will always keep clean. I have used a pen something on the plan of this, but it is now too small for my purposes. This will easily accommodate forty hogs.

I will add this rough estimate of the cost of such a building:

2,160 feet two-inch plank for flooring, at $20,.....	$43.20
1,320 feet inch boards, for siding, at $20, ...	26.40
9,000 shingles, at $5 per thousand, ...	45.00
Sheeting-boards, rafters, and joists,.....	25.40
Carpenter's work, including hewing timber.....	60.00
Total,.....	$200.00

For this sum I am certain it could be built with us, but would, of course, vary in different places.

Niles, Mich., January, 1865. H. L.

OSAGE ORANGE HEDGES.

I notice frequent inquiries, made by correspondents in your paper, for Osage Orange seed. I have a number of trees of twenty-five years growth, which produce abundance of seeds. I do not know whether the seeds in *all the oranges* would vegetate, but I have often seen the seeds sprouting in the spring from the fruit that was decaying on the ground. Since I have had a supply of roots, I have found it easier to grow plants from their cuttings than from their seeds. Cut the roots into pieces four or five inches in length, and plant them in beds as you would onion sets, and they will grow with as much certainty as willows.

The plan of trimming the hedge adopted by Prof. Turner, is the true one when the farmer has the time to do it in proper season; but I have adopted a plan which, although not so ornamental as his, makes a most efficient hedge, and the work can mostly be done in the winter. I cultivate the hedge well for about three years without trimming; then in the winter cut the plants off near the ground, throw them back on the line of the hedge, and beat them down well with a pole to make them lie close. Four or five times as many plants will come from the roots, and passing through the prostrate branches, will make the hedge impenetrable to any animal larger than a rabbit. The operation may be repeated once in three or four years, and you need not fear the depredation of unruly cattle. JAS. DINSMORE. *Boone Co., Ky.*

Yellow-billed Cuckoo.—*Coccygus Americanus.* BONAP.

The bird which we present to the reader is not very well known. This is owing first to its shyness and anxiety to conceal itself among the thick foliage of small trees; and second to its very equal distribution over the country. Other birds, as a general rule, prefer some one section of the country to any other, and consequently are to be found there in great numbers. But the Yellow-billed Cuckoo is rarely seen in any place in large numbers. A pair will choose a suitable spot for rearing their young, and there will they resort year after year. Their progeny, instead of breeding in the vicinity as is the case with most birds, choose a separate spot for this purpose. Thus it will be seen that they are an essentially solitary bird, so to speak, for it is rare to find more than one pair within a near distance of each other, except, indeed, during their migrations, when they assemble in flocks of considerable numbers.

The Yellow-billed Cuckoo enters the Southern States in March—the males arriving first and the females a few weeks later. About the last week in April they arrive in Pennsylvania, where they breed as well as to the northward, and they leave Pennsylvania in September to return to the South.

Their flight is rapid, horizontal, and is moreover performed with the utmost silence. When making their way through close bushes, they frequently incline their body to one side or the other, so as to show the underneath part as is represented in our figure.

The notes of this bird resemble the word "*cow, cow, cow,*" repeated eight or ten times with increasing velocity. Owing to this fact it is very frequently called the *Cow Bird.* AUDUBON states that the inhabitants of the northwestern part of Pennsylvania call it the *Rain Crow*, and that in Louisiana it is called by the French settlers the *Coucou.* J. P. NORRIS.

HOUSE GARDENING.

There are certain products of the garden which have become important in the household economy of every family, and the earlier they can be brought forward, the longer will be the season through which they can be enjoyed. Hot-beds are very convenient to start such plants, but as every family or every neighborhood may not see fit to start hot-beds, a simple way presents itself, by which all may have a supply of tomatoes and kindred plants, with a little labor, which will more than be repaid by the end gained.

It has become a custom with many within our knowledge, to take as many crocks or flower pots as may be necessary for the number of plants desired, and in order to have every thing ready in due season, to fill them with rich earth in autumn and set them in a safe place, away from frost, for spring use. Early in March the pots are brought out, the seed sown, and the pots kept at a convenient distance from the stove to favor germination. When the plants are well started and the strongest has developed itself, all the others are taken from each pot in order to give it a chance for a full expansion. They should be exposed to air in favorable weather, to give them health and hardiness. In this way much better plants will be obtained than is usually found in the crowded lines of the hot-bed, where branches and roots of different plants are allowed to intermingle to the disadvantage of each other.

When the state of the season will admit of planting out in open ground, such plants will be large and strong. The roots by this time fill the pot, and ask more room for expansion. By allowing the earth to become moderately dry around the margin of the pot, they may be taken out with the ball of earth adhering to the roots, and introduced into the well prepared soil without the least check of growth, and will at once push forward with renewed vigor.

Preparation of soil before transplanting.—All garden soil should be deeply and thoroughly pulverized before the crop for the season is introduced, while the manures applied should be adapted to the plant to be cultivated. Tomatoes do best with quick operating manures; that from the hen-house is admirably adapted to their taste. Last season we fed a lot of plants with ammoniated Pacific guano, and found its effects excellent. Caution must be used, however, in the application of either of these manures. If they are placed too near the roots of plants, they are too hot for them, and injure rather than benefit. We have known instances where, from their burning qualities, they destroyed them. When applied they should be well mixed with the soil, and they are then beneficial to any crop.

W. BACON.

Richmond, Mass.

THE KITCHEN GARDEN.

BY A HOUSEKEEPER.

Celery.—For early use have plants in a hot-bed; for later, sow in a cool spot in April.

Transplant your plants in June, in rows 5 feet apart. The trench or row in which you transplant should be well manured with old well-rotted compost. We have succeeded well with celery planted in the row in which it is intended to stand. Shade and water your plants until well set.

Earth up your celery gradually as cold weather approaches—always in dry weather—and taking care not to bury the hearts. It may be pulled up and buried in sand in the root cellar for winter use.

Sweet Potatoes and Yams.—Put your seed in a moderate hot-bed the first of April to sprout. Have your ground prepared as directed for roots, and if convenient to mix river sand with the soil freely, you may consider you have the two prime requisites for a sweet potato crop secured, viz., looseness and heat. Put your plants in rows or hills, or ridges. Allow three plants to a hill, or place them a foot apart in ridges. Keep the plants clean until the vines cover the ground.

Harvest before frost touches the vines. We omitted to say that your hot-bed should be watered with blood-warm water every evening, enough to keep it moist.

Two bushels of seed ought to produce 100 bushels of potatoes. Poultry droppings are very favorable to this crop.

Tomato.—Since this plant has acquired double value oy its capability of being preserved (by potting) entirely fresh for winter, it deserves double attention in cultivation. Raise plants in hot-beds for early fruit, and sow seed in April for later plants, or, if the spot where they stood the previous year has not been disturbed, you will be sure to find strong, hardy plants there, as early and abundant as from a seed bed. Plant in good ground, 4 feet apart, and give the plants support, or if that is not practicable, spread the ground beneath them thickly with clean straw, to prevent the rotting of the fruit from contact with the ground.

Chickens are very destructive to this vegetable. When winter approaches pull up the vines, and hang up in a warm cellar; all the half ripe fruit will mature. Ripe tomatoes cut with stems, and placed just not touching each other, will keep a long time.

Salads.—We comprehend under this head all greens used, raw or cooked. They are a luxury in any garden, and indispensable to the farmer on the score of economy and humanity, understanding the last to comprehend the duty of providing not only a sufficiency but variety of food, for those who labor (and in a wide section) for no other remuneration but care and provision for them. Turnips, horseradish, beets, and radishes, are the only roots we remember that produce leaves for this purpose. Small salads, lettuce, mustard, garden crops, spinnach, or any of the cabbage tribe, may be sown in good ground in extremely early spring, and again in early fall. Some of these small salads perpetuate themselves by the seed falling on their beds. A good crop of cabbage, embracing a succession of kinds, plenty of turnip and mustard, will afford you the desired supply for the whole year.

REMEDIES FOR FOWLS.

What your correspondent C. P. B., writes in regard to fowls never willingly applying but one remedy for lice, namely, "dust of some sort," is very true, and why is it true? Because they have no other remedy to apply; and if they had they know not how to apply it. The best English chemists have pronounced keresene oil to be the most effectual and harmless remedy known for the destruction of parasites upon animals and fowls. I have proved it by experience; the lice die at once, and their extermination is almost certain.

I fully concur with him in his remarks on breaking hens of the inclination to set; two days' confinement is generally sufficient to overcome the incubating fever. I think it is by far the best and most humane remedy known.

A very valuable remedy for sick fowls is jalop. I have often tried it, and been astonished at the rapidity of their recovery from disease; it is very efficacious in many diseases, and its timely administration would save many a valuable fowl; fourteen to sixteen grains made into a pill is a dose for a good sized fowl.

Melrose, Mass. O. H. P.

MAKING MAPLE SUGAR.

MESSRS. EDITORS—The season for making maple sugar is near; I send a few lines giving my experience in this branch of farming. Sugar is clear and white in its natural state, but is generally made red and sometimes nearly black by the careless manner in which it is manufactured. The sap buckets claim our first attention. Tin tubs are much the best. They can be stored in a much smaller space, are light to handle, and less liable to sour than those made of wood. The high price of tin will deter many from using them. Very nice sugar can be made however with wooden vessels, with proper care. Before using, they should be washed with hot water, and when the sugar season is over, give them a coat of red paint on the inside. They should be thoroughly washed before painting. This will give them time to dry and harden through the summer months. Treated in this manner, they are not so liable to get sour, and are more easily washed and kept neat. In tapping trees, use a half inch bit, never larger than three-fourths, because nearly as much sap will be obtained in the season as from a larger bore, and the wound will heal over more readily. At the commencement of the season it is well to tap the tree on the south side. Frequently the sun will thaw the tree and start the sap several hours sooner than when on the north side. As the season advances, if the hole becomes dry, the tub can be shifted to the north side. Bore the hole about two inches and a half to commence with, and after two or three weeks, drill an inch and a half more, which will make the wound four inches, which is about the proper depth in order to get the best quality of sap. When the weather begins to be warm, a thick slimy substance collects on the bottom of the tubs. This will certainly sour the sap and injure the quality of the sugar. I give the following remedy: Take a small broom corn whisk, and as fast as the sap is gathered, let one man follow with a pail of water, turn in a little, brush it thoroughly with the whisk, turn it out and let it drain a moment. If this plan is not practicable, leave a little sap in the tub, which is nearly as good as water. Sometimes it can be done after a rain storm when turning out the water. This operation should be performed at least twice in the season. At this late day, I presume nearly every farmer has good sheet-iron pans set on an arch, so we will not consume time in advocating so important an apparatus for making nice sugar. Soon after the sap begins to run, gather and boil it as fast as possible. If delayed too long, the sap commences to sour and the quality is injured. After boiling a few hours let it run down to syrup, turn it out, and begin with a fresh supply of sap. My opinion is, that when boiling all day without running to syrup, it becomes oxydized, turns red and injures the color. The syrup should stand a few hours to cool and settle; then strain through a woolen cloth, add milk, about one pint to sixteen quarts of syrup. After the scum is taken off, strain again through a clean woolen strainer, boil it quick and it will be soon ready to make an article which you will be proud to call maple sugar.

I formerly supposed the greatest quantity of saccharine matter was contained in the sap from the layers of wood near the surface of the tree. From carefully conducted experiments this theory was proved to be untrue. The following plan was adopted to test it: Selected a tree eighteen inches in diameter, bored a hole with an auger 1⅛ inches in diameter, two inches in depth from the inside bark; drove in a hollow wood tube for conducting the sap—commencing at the centre where the first incision left off; bored another hole with a half inch bit exactly two inches deeper into the tree, making four inches in all. Inserted a half inch spout through the hollow tube into the second bore very snug, so that the inside sap might not leak into the other. This tube was much longer than the first, so that in using two vessels side by side, the sap could be conducted beyond the first tub into the second. The sap from these incisions was boiled separately at the same time in two kettles on the stove, with the following results: Three and one-half quarts of sap from the first and outside bore made four ounces of sugar; the same quantity of sap from the inside bore made five ounces of sugar, each done to equal dryness. This result was so contrary to expectations that I tried the same process the next day with exactly the same proportions. The quantity of sap discharged by the large bore was somewhat greater than the small one, but not in proportion to its larger size. The benefits to be derived from this experiment would seem to be the following:

First, as a general rule, bore with nothing larger than a half inch bit, the wound healing more readily.

Second, bore a little deeper than usual, thereby improving the quality of the sap.

I also at the same time made an experiment with sap from the *soft* maple, in order to find out the comparative merits of the two species for producing sugar. The trees stood near each other; an equal quantity of sap from each tree was boiled down in separate vessels. The weight of sugar from both trees was alike—that from the soft maple being a shade darker, but very nice however. The maple tree is the pride and ornament of our Northern forests, and some of the pleasantest hours of my younger days were spent in the old "sugar bush," gathering and boiling sap, when the fashion was to roll up two huge logs near each other, string a number of five-pail kettles on a pole between them, and then punch fires all day, and far into night sometimes, occasionally turning over an empty store tub facing the bright fires, just as contented as ever Diogenes was in his palmiest days. I will close by advising my brother farmers to set out maple trees in large numbers wherever they will grow, thus conferring a two-fold benefit, beautifying the landscape with their green summer foliage, and the more beautiful gold and crimson tints of autumn, as well as the delicious sweet they will give to the generations following. LAWRENCE SMITH.

West Worthington, Mass., Feb. 13, 1865.

THE USE OF PLASTER.

EDS. CO. GENT.—There seems to be a great diversity of opinion in regard to the manurial qualities and benefits of plaster; some contending that it is merely a stimulant, and uncertain in its results; and that the extra growth it sometimes produces, is at the expense of future crops. Others contend that it is really a manure, and is a real benefit to the land for crops following its use. Now, my opinion is, after four years use and experimenting with plaster, that it is the best of the concentrated manures, and pays the best interest on the investment of any manure used. I have witnessed its use on a variety of soils, from a stiff clay, black prairie, gravelly, down to the poorest light sandy soils, with the best results. A great deal depends on the time of applying it. I am well satisfied, after numerous experiments, that it should be sowed early in the spring, before early rains are over, so that it will get dissolved. If sowed after the spring rains are over, it will be of very little or no benefit, or such has been my experience. It should be used at the rate of from fifty to one hundred pounds to the acre. M. J. GAREL.

Volinia, Mich.

Recipe for Soda Crackers, Carolina Cake, &c.

MESSRS. EDITORS—I have some recipes which I think very good, which I will send you.

Soda Crackers.—Stir into fourteen cups of flour, two teaspoons soda, four of cream of tarter—after which rub in two cups shortening, lard or butter—mix with cold water, mold, and pound half an hour—bake in a quick oven.

Carolina Cake.—Two coffee cups white sugar, three of flour, one of sweet cream, two tablespoonfuls of melted butter, whites of five eggs well beaten, half a teaspoon cream of tartar, quarter of a teaspoon soda, one teaspoon extract of lemon, one quarter pound citron—put half the mixture into the baking-dish; slice the citron in thin slices, and lay them over the mixture pretty plentifully—then pour the remainder over the citron. I think this makes a nice and very cheap cake.

Suet-Pudding.—Take one and a half pounds flour, six ounces beef-suet chopped fine, quarter teaspoonful of saleratus, half pound of raisins—mix these together with water, as stiff as can be stirred with a spoon—put the mixture into a bag, securely tied, and boil one and a quarter hours.

To make of preserves instead of raisins, leave out the raisins and mix with the hand the same quantity of flour, suet, &c.; roll as pie-crust to the thickness of a quarter of an inch—then spread on preserves and roll the whole together, and put into a bag and boil as above.

Phelps, N. Y. MRS. A. DECKER.

Management and Profit of Poultry.

MESSRS. L. TUCKER & SON—Having become one of the subscribers and readers of your paper, I have been pleased with two or three articles under the head of poultry-yard, and have herewith ventured to send you a statement of the receipts and expenditures of my poultry-yard for the year 1861; also my mode of rearing the same.

I select (when I have determined on the breed) fowls which have all the marks of the breed well developed, for I believe that "like produces like," taking the medium sized ones, using none of the over-grown or small ones. Hens with a full, bright eye, full breasted, compact body, and stately carriage. For a cock I take a fowl rather coarser built than the hens, but not by any means the largest, but the middle sized, for the over-grown ones are too apt to lack the vitality which is very necessary to a good healthy chicken.

If I have selected hens in color darker than the breed seem to warrant, I take the opposite in the cock, for if you breed together either extreme color, you will change the plumage of your fowls if you continue to thus breed.

For instance, I can by picking out the lightest of Brahma fowls, in three years, get white fowls, or by the other extreme, in three years have them a very dark gray; but by always having care to in-breeding, bring the extremes together, you will have a fowl with that fine slender head, arched neck richly hackled, with black body of a rich orange white, black tail, which will show a dark green in the strong sun-light, with the lower line of the wing like the tail, with redish yellow legs (feathered or not, as the breeder may choose) all of which a breeder should be satisfied with, nothing less.

With a selection of not less than six or over ten of such hens, with one cock, I have a stock from which to select eggs for setting. And in selecting the eggs for setting, I take none but the average size, which are perfect in shape. For a nest in which to set the hens, I take a box fifteen inches square, six inches high. I fill the box up three or four inches with fine ashes or loam or chaff, using as little hay as is barely sufficient to form the nest. If too much hay or straw is used, before the hen shall have set three weeks, the nest will have become so deep in the centre as to allow the eggs to roll one upon the other, thus causing some to break, which not only causes the loss of the egg broken, but oftentimes so besmears the others as to prevent the others hatching, for you could as well hatch an egg which had been varnished as hatch one that had been coated over with the inside of another egg. With a hen which has set steady, I hatch nearly all the eggs, the chickens of which I never disturb till they are twenty-four hours old. Before or when I take them from the nest, I oil their heads with sweet oil, which destroys all the lice there is in the brood, for all the vermin there is on the hen, leaves and goes on the chicken as soon as hatched.

Here let me say, if you wish to set hens in the months of January, February or March, put but nine eggs under a hen, as you will get more chickens out of a given number of eggs than if you set more, and the chickens will come out one day earlier, and stronger besides. When I set hens in April or May, I set from eleven to thirteen eggs, according to the size of the hen. After which time I give a hen all the eggs she can cover with her feathers.

Chicken coops I construct 24 inches wide and 30 inches long, sides one foot high, with double roof, one end open, with a floor, which I keep well white-washed, and the floor of the same well supplied with saw dust and fine ashes, which I take care to remove once a week, replacing the same with fresh.

The floor protects the chickens from the effects of the damp ground, besides the lives of many chickens from the scratching of an over anxious mother.

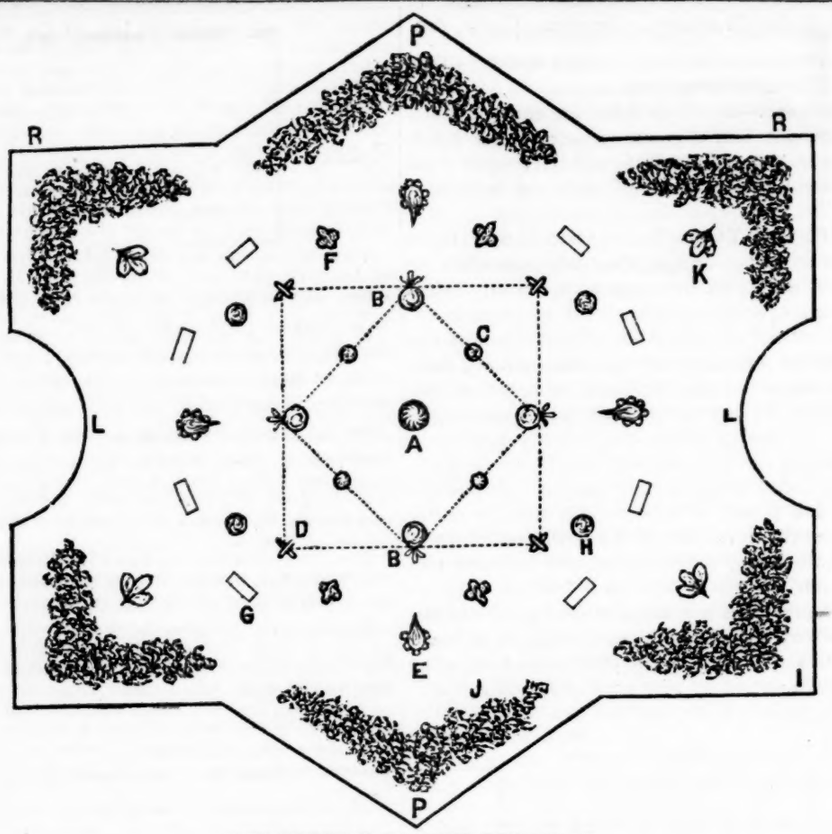
My food for chickens is cracked corn given dry, with plenty of fresh water. Wheat screenings are very good for young chickens, and warm mashed potatoes. But fine meal dough, will I think, cause more death in a lot of chickens, by crop bake, than all other casualties put together. I set, when I can, ten hens at a time, and give the chickens 20 in number to each hen, setting the balance of the hens a second time in this way. By setting five more I can get in six weeks 15 broods from 10 hens, making 10 hens bring up the chickens of 20 brood. The hens set the second time, generally hatch more chickens than they do the first time. Care should be taken to thoroughly clean the nest before setting the second time. As soon as the chickens can swallow, I give whole grain with scraps of fresh meat cut fine, with occasionally a meal of mashed potatoes, taking the hens away when they are four weeks old, then allowing the chickens to roam where they will. I take care that they have feed and water to go to whenever their inclination prompts.

With the above care, fowls will not fail to grow fast enough, and come to maturity early. I had a brood of 11 Brahma chickens 11 weeks and 5 days old, which weighed 34 pounds; also 4 pullets and 1 cock, (5 in all,) weigh at 5 months old, 28½ pounds. I sold one Brahma crower 8 months old, a few days ago, which weighed 9 pounds. My pullets generally commence to lay from 5 to 6 months old. In 1861 I had a pullet of the blue Leghorn breed lay at 4 months and 1 day old. In 1862 I had a White Leghorn commence to lay at 3 months and 25 days old, which is the earliest I have ever heard of.

With the above care no one need to ask his neighbor if keeping poultry pays a profit to the breeder. Aside from the profit in and of themselves, I will give a short experiment of mine with trees. I had four old Rhode Island Greening trees, which it was said by my neighbors had not yielded more than 20 bushels of apples in 20 years. They had got so they would not grow over two inches in a year, and presented a mossy and scrubby appearance. I enclosed them in a yard, and put in 36 hens; they remained there two years, in which time I grew wood from 10 to 15 feet, and in some cases limbs 17 feet long, with no other help but the hens' scratching and droppings. The third year I had succeeded in making all new wood, and that year *picked* 13 *barrels* (not bushels) of sound winter apples, besides all the wind falls.

The above I submit, hoping it may interest some one, as previous articles from others have me in perusing your paper, and I would call the attention of your readers to an article from the pen of D., in Jan. 26th's issue —Indian Corn and Poultry—all of which I believe to be true. I. K. FELCH. *Natick, Mass., Feb.*, 1865.

Madison County.—The Sixteenth Annual Fair of the Brookfield Agricultural Society, will be held on the Society's grounds in Clarkville, Tuesday and Wednesday, October 3d and 4th, 1865. A. J. S.



ORNAMENTAL FLOWER BED—No. 2.

BEDDING PLANTS AND ANNUALS.--No. 2.

An illustration was furnished in the former article, of a bed planted on the combination principle. The shape is circular, because the most common in use—but it is only desirable for small beds. A great variety of better shapes have come into use, many of which possess the great advantage of more convenient access to the plants without treading upon the soil. And when weeding and tying up flower stems are undertaken by the wearers of crinoline, the ladies will always vote for such formations.

Bed No. 2 is an oblong; if a square is more desirable it is equally good.

A conspicuous object for the centre is of importance. Any of the following are good:

A.—Cryptomeria nana; evergreen; pendulant, like the Scotch Larch; (not always hardy.) Cratægus pyrocantha; evergreen thorn. Andromeda floribunda; a charming shrub. Striartia virginica; very handsome while flowering in August, but rather expensive.

Either of the above to be set out in the centre of the bed. At equal distances from the center shrub—

B.—Four plants of Wigelia rosea; a charming shrub, profusely covered in spring with showy blossoms, but requires frequent and judicious pruning to keep in good shape. These are to be planted not less than four feet from the centre shrub, (midway from stem to stem,) and the Wigelias must not be allowed to crowd on the centre.

Close to each of the Wigelias, *in front*, so that the long flowering stems may reach to the ends of their branches, plant

Delphinum formosum; the best of all hardy blue perennials—(5 cents worth of seed sown in Feb. in heat, will produce 30 or 50 plants, most of which will bloom in August, but small, compared to plants raised the previous year and set out in October.) These bloom finely in June and repeat in the fall, if the flower stems are cut down immediately after the first blooming.

C.—Four plants of Hollyhocks; these take high rank now in England as prize flowers, having been vastly improved of late years. I have grown them from seed, nine out of ten double, and nearly all perfect blooms. But fine seedlings should be propagated at the end of September, by division of the roots, using pots of light porous soil. Set these in a cold frame, and shade from the sun till the plants recover and begin to push. They must be wintered in frames, and planted out immediately after frosts are over.

D.—Four plants of Coleus Verschaffeltii. This is a gorgeous variegated foliage plant, which grows to great perfection in the most sunny exposure, up to the first approach of frost, when it succumbs. Its rich crimson maroon leaves, tipped and blotched with green, have a most charming effect, and contrast splendidly with the surrounding shades of green and other colors. One plant preserved through the winter will furnish a score, if the shoots are struck in heat during February or March, when they root in six or eight days—should then be potted off in small pots, using a mixture of pounded charcoal, white sand and pure mold, in equal proportions. The two first are best to strike in. This plant cannot be too highly recommended, and may be obtained anywhere for 25 cents.

E.—Four plants of Salvia Gordonii: a brilliant scarlet and profuse bloomer. This variety is much more dwarf than the common sort, and can be kept in much better order.

F.—Four plants of cerise colored Geranium, Paul L'Abbe, the best of all high colored Geraniums out of doors and in the sun. (Should be plants struck in the fall and wintered in the house, so as to get a prominent effect early—small, purchased plants are not effective till late in the season.) Princess Alice is nearly as good; a full scarlet.

G.—Four plants of Linum tryginum; beautiful yellow greenhouse perennial—most easily propagated.

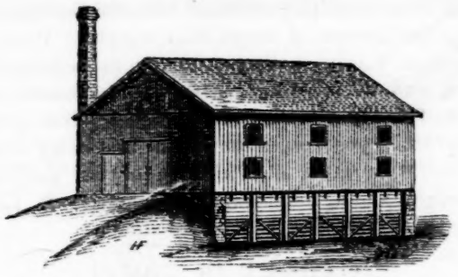
H.—Eight plants of Tree Carnations or Picotees—that is two each in rear of the Linums. The Monthly Red is excellent. There are also White, Pink and Purple selfs, all good, and white grounds, tipped Rose. The propagation of these would require a separate article—it is easy.

I.—At these four corners we require dwarf plants, and each may be different—1st. Œnothera Drummondii nana—Annual; a beautiful dwarf evergreen primrose (yellow.) Intermix with a few detached plants from seed of Phlox Drummondii—2d. Dianthus Hedweggi (from seed;) intermix with two or three plants of Saxafraga sarmentosea, (called Beefsteak plant,)—3d. Variegated Balm; a heavy, quick growing perennial. Intermix with a few dwarf French Marigolds—not too close—4th. Verbenas—Fox Hunter is the best I have found for braving the sun—a bold scarlet and strong grower.

J.—At these two points sow any of the following annuals: Linum grandiflorum rubrum, mixed with Blue Nemophila—or Collinsia Burtsiofolia, mixed purple and white—or Candytuft iberis Kermesina, among which drop three or four seeds of Lupinus subcarnosus.

K.—One Bouvardia at each corner, Leanthe, Hogarth, Oriana, Clara.

SCARBROENSIS.



PLAN OF A SHEEP BARN.

EDS. CO. GENT.—As long as the sheep mania continues, barns arranged especially for them will be built. I enclose with this a plan of a barn I am about building on a farm of 122 acres—it is arranged especially for sheep. I have used one like it, (only it was 50 by 80 feet, and the rack partitions ran clear through) for the past 16 years, wintering on an average 600 head of sheep in it, often times losing none, and but seldom a dozen, and they generally broken mouthed.

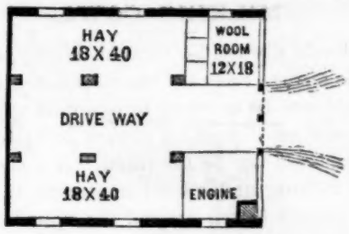
The plan enclosed is for a barn 50 by 60. It might be lengthened out the same way to a hundred or hundred and fifty feet. If the *ventilation* is good, I know that a thousand sheep can be kept under the same roof, as well as fifty.

It will be seen that the end of this barn is to the hill, and not the side. As it will have to be filled in some to drive into, it is arranged for a cistern at each of those corners, with a root-cellar between, and *it* will have a trap-door above with door into the basement. There will be a lead pipe to convey the water from the cistern to the troughs; there will be small boxes about six inches square and six feet long, running down to where the pipe leaves the cistern, where the cock will be to let the water out when wanted.

The wall at the end that you enter above, is sloped off at both sides, and the dirt filled up against it, so that the pipes are under ground till they reach the first trough, or rather above it, for there will be a long trough on each side of the barn over the tops of the yard fences, (which are only three feet high,) and over each yard trough there will be a small hole in the long trough, and gutta percha pipes to take the water down to the drinking troughs.

The basement will be 9 feet high, and the *gates* at each side, 4 feet high, with swinging doors on the sill above. These doors should always be left open on both sides of the barn, unless during a rain or snow storm from the north, when they may be closed, leaving the south open; if from the south, close those, leaving the north side open. They never should both be closed at the same time, nor at any time unless a rain, hail, or snow storm; no matter how cold, I should leave both open. There should be ventilators built up, one by each of the four posts, seen in the main floor, and on the opposite sides of the holes for throwing down hay. The basement can be used for six flocks, or by putting in light doors swinging on the joice over-head, it can be arranged for twelve flocks.

The main floor will be arranged on the left as you enter, for a four horse power, *Ericson engine, corn mill and root cutter;* on the opposite side a meal room and



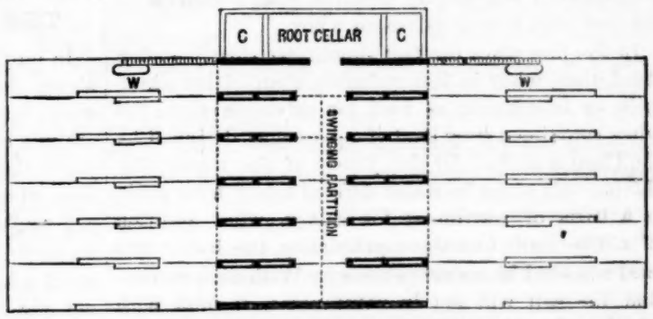
Main Floor.

three bins, with outlets below, one for corn and cob meal, one for oats, and one for bran. The four bays will be used for hay and wheat.

Many farmers object to high barns, but when once you have your hay on one of these large forks, it is but little trouble to raise it a few feet higher. I have used one of these large forks for sixteeen years, and have often unloaded a ton and a half of hay in four and a half minutes, and thrown it up to the top of the mow, in a barn with twenty feet posts.

Some may object to the number of gates, but I think you can never have a thing too convenient.

Now a little as to feeding and care of sheep. My custom is to keep their yards and pens well littered with straw, and give them the range of the pens and yards at all times except during storms or while feeding, when the gate from the pen to the yard is closed, as the case may be.



Plan of Barn in centre, and yards each side.

C. C. Cisterns—W. W. Water troughs—5 ranges of racks in central part of barn, each division of which is 11 feet long—the yard grain troughs (longer,) and water troughs (shorter.)

At daylight they are shut up in their pens, and feed placed in their troughs in the yards of one-third cob meal, one-third oats, and one-third bran, at the rate of *two bushels* of this mixture to the hundred. While they are eating this, their racks inside are filled with wheat or oat straw, the gates opened, water put into their troughs, and they can go in or out till four P. M., when they are fastened into their yards and their racks filled with hay; sometimes clover, and sometimes timothy, when the gates are opened and they can go in or out till morning, unless it is very cold or stormy, when they are fastened in. If any practical shepherd can improve on this plan I would like to hear from him.

J. B.

Zanesville, Ohio.

Onion Culture.—Mr. J. J. H. GREGORY, the well-known Seed-Grower of Marblehead, Mass., has published an excellent pamphlet on this subject, which is advertised in another column. There are few matters on which we have more frequent inquiry, and Mr. Gregory's experience is such that we may refer with confidence to this statement of its results, some extracts from which we hope hereafter to present.

MILKING COWS.

Cows should always be treated kindly, and as far as possible always have the same milker. A fractious man should not be allowed to handle a spirited cow. Kindness and gentleness are always best; beating and pounding should not be tolerated. If a cow or heifer persist in kicking under kind treatment, take a small rope and quietly fasten around the opposite fore foot, thence bring it over the back to hang by the milker; when she kicks again, without saying a word, draw her foot up to her body. You can now handle her as you please. She will struggle to release her foot, but to no purpose, and will soon crouch to the floor. Now let her get up again, and pet her a little. If she kicks again repeat the operation as often, and you will soon find she will not move a foot while you are milking, unless there is some irritating cause like sore teats or sharp finger-nails. P. M. AUGUR.

Middletown, Ct.

RAISING CALVES ON WHEY.

MESSRS. EDITORS—Mr. Shattuck, of Chenango Co., has given your readers a valuable lesson on the subject of raising calves on skim-milk; and, with your permission, I will briefly describe what is considered the best plan to rear calves on whey.

In the first place the fact should be clearly understood that whey is less valuable than either skim-milk or buttermilk as food for calves or pigs; yet whey contains a good deal of milk-sugar, designed by the Creator as food for the young of the mammalia. Having this sugar in water derived solely from milk, as a basis of nutriment for calves, what addition should be made to restore, practically, the butter and curd removed in making cheese? With such restitution, the calf will get in substance new milk with which to form healthy blood, and grow finely.

Passing by the analysis of oat meal, the intelligent reader will hardly be ignorant of the fact, that healthy men and women have long been raised from childhood on oat meal porridge. Porridge of this kind is oat meal boiled in water and seasoned with salt. This meal from good oats, is richer in gluten or curd than wheat flour; and will, when cooked, not only make young children grow up healthy and robust, like the best specimens of Scotchmen, but accomplish a similar result in the systems of calves. Whey can easily be boiled in iron pans or kettles, and have oat meal stirred in to make a thin porridge, which calves will drink with best results when warm as new milk. Confident that this plan will operate to the satisfaction of cheese dairymen, I will venture a few suggestions on raising oats. The experiment of your correspondent E., Chester Co., Pa., who raised 86 bushels of oats per acre by the use of bone dust, is full of instruction for stock-growers. It tells of the lack of phosphates in the soil; and in that connection I would hint to the dairy farmers of Herkimer Co., that the State Census of 1845 credits them with 8,208,796 lbs. of cheese as their annual product; and now it has gone up to 17,000,000 lbs. Forty gallons of milk contains a pound of bone earth equal to one and a half pounds of bones with the gelatin not removed. Dairymen, intensify your tillage and husbandry by the purchase of the best phosphatic guanos, which grind to an impalpable powder between the upper and nether millstones of uncommon weight. With this fine flour of bone earth, top-dress your pastures, meadows, and raise, with a little stable manure, large crops of heavy oats as food for calves. Not to raise these, when you keep some of the best dairy cows in the world, is rather discreditable to your patriotism, enterprise and agricultural attainments. D. LEE.

District of Columbia.

GARGET IN COWS.

As this disease is somewhat common when cows are giving a large flow of milk in spring, I give my experience. Having a valuable cow two years since, which gave an unusual quantity of milk, I found one night at milking, one-quarter of her udder had become very hard, and only yielded a small quantity of clotted milk. The remedy I used was this, which I had seen in an agricultural paper, viz., 8 drops of tincture of aconite dropped on a piece of bread and mixed with her feed.

In the morning she was much better, but I gave 4 drops more, and the night following found her all right, with about her usual quantity of milk. Since then I have tried the same remedy in one or two instances with equal success. P. M. AUGUR.

THE WAY TO BUILD A HOG-PEN.

In building a hog-pen, durability as well as convenience should be sought after; and all pens made of wood, however neat in appearance, when first built, are in a short time hard looking objects, and in a few years the work has to be done over again. Every man who keeps a pig wants a pig-pen, and every pig-pen wants a building attached to it, or every pig-pen wants to be attached to some building large enough to set a kettle or an agricultural furnace, and for storing pig corn overhead. No grain for family use should ever be put in, or over a hog-pen; hence the objection to a corn-house over a hog-pen. The building for common farmers should be about 14 by 18 feet, with ten feet posts, and a steep roof, that will give plenty of room over-head for storing the poor corn usually fed to pigs; also, it is convenient to store away rakes, scythes, hoes, cradles, and all light tools not needed in winter. Then on one side of this building, build your hog-pen; the building will form one side. The pen should be about 12 by 16 on the inside. Dig a trench about two feet deep for the foundation, and fill with coblestone, which will serve as a drain, and prevent the frost from disturbing the wall; then on this build a stone wall, laid in lime mortar, about 3½ feet high, leaving a door-way in the wall in the most convenient place for the gentry to walk in or out; then on the top of this wall place timbers framed together like the sills of a building. The timbers should go all the way round, well locked together so they will not spread; then on these timbers place your rafters; board and shingle as well as you would a house to live in, for you will have a hog-pen during your natural life-time; leave a door-way in the gable end to throw out manure and to throw in litter. It will be cool in summer and warm in winter. If large flat stone cannot be found handy for the floor, lay down hemlock plank flat on the dirt; they will last a long time, for they will always be wet—put in a cast iron trough and you will have no more trouble about a hog-pen for long time.

X. Y. Z.

APPLE ORCHARDS.

Will you give me your views and advice on the following questions: In setting out an orchard of ten acres to grow apples for market, what kind or kinds would you advise me to set out in this section (Niagara Co., N. Y.)—age of trees, distance apart, and manner of setting them out, &c.? Some prefer to set out quick and nice growing trees, and in a few years graft in them such fruit as they desire; contending by so doing they will have better trees and apples as soon. Many farmers think there will be no profit in fruit-raising in 10 or 15 years, on account of the thousands of acres which have been set out in Western New-York during the last few years—that when they come to bear, the market will be overstocked. What is your opinion? NIAGARA COUNTY, N. Y.

The best market varieties at present generally cultivated are the Baldwin and Rhode-Island Greening. These stand first on the list of most market orchardists, but others think that the Roxbury Russet for its long keeping and adaptation to spring marketing, will prove more profitable. The Tompkins County King is an excellent and showy apple and sells at high prices, but is less productive than the above. When fruit of very fine quality is more appreciated, the Northern Spy will probably take a high stand. There are several other varieties that may be added to the above, the value of which cultivators differ upon, such as Peck's Pleasant, Golden Russet, Fall Pippin, Seeknofurther, Jonathan, Newtown Pippin, Hubbardston Nonsuch, Esopus Spitzenburgh, &c. Trees do best when transplanted when young, say two or three years from graft, not more. Thirty-five feet is a suitable distance asunder. Setting out "natural" trees will do where they happen to be on hand, and where the owner has not certainly fixed on the sorts; and it is also well suited to the northwestern regions of the United States, where severe winters frequently injure or kill trees worked near the surface of the ground.

With regard to markets 15 years hence, we cannot speak with certainty, but rather in relation to present management. Judging, however, from the past, from the rapid increase of population, from the inherent fondness of good fruit in all the human family, from the fact that fruit if not saleable is an excellent feeding for domestic animals, and especially from the fact that fruit on well-managed orchards, thinned and selected, will always bring cash readily, no matter how abundant poorer apples may be, we think that it will not be hazardous to plant more orchards—unless, as is generally the case, they are neglected or but half cared for.

Drawing and Spreading Manure in Winter.

EDITORS CO. GENT.—I have noticed articles in the COUNTRY GENTLEMAN, both from your own pen and from correspondents, advocating spreading manure on the surface this time of the year—that is, drawing it immediately from the stable or yard, and spreading on the snow. Now my own experience has proved that this is not the best way to apply manure.

Some three years ago this winter, I had a man with but little for him to do, and quite a pile of manure in the yard. So I concluded to draw it out as help was likely to be scarce, and I would do what I could towards helping along with the spring's work. I had him draw out about thirty loads, and spread on the snow where I had sown winter rye in the fall, thinking it would afford protection to the grain through the early spring. The ground lay fair, and was not much rolling. I also had him draw out about twenty loads and put in one pile in a field that I had broken up in the fall for corn. I had also in the past summer, immediately after harvest, spread about twenty loads on the meadow.

Now for the results. The snow that winter was on quite a body of ice similar to the snow now, and was taken off by a heavy rain, and with it the best part of the manure that I had spread on my winter grain. The ground was frozen and covered with ice, so that all the water run off, and could not soak in the ground. You could see the dark colored manure water standing along the fences and in the road for some time; in fact all the finest and best part of the manure was washed out by the rains and snow, and I could see very little benefit to the grain in the summer. There was no water running on the field only what rained on it. The manure that was drawn out in a pile, I found in the spring in the finest condition; it had not washed away a pailful, only what soaked in the ground where the pile lay. Nor did it heat, but stood nice and moist, and I spread it on the surface a few days before planting, and had a fine crop of corn. The manure I spread on my meadow after harvest gave me good satisfaction, and you could see to a foot where the manure was spread, in the color and quantity of the grass. Now from my experience, I do not like to spread manure on the snow. If you want to draw out your manure in winter, put it in piles where you want it in the spring. W. GOODRICH, JR.

Watervliet, Feb. 22, 1865.

Iron Dish Cloth---Iron Clothes Lines.

MESSRS. EDITORS—Like yourself and your "Constant Reader," I was once so ill-informed of the progress of the *fine arts*, as not to know what an iron dish cloth was. But seeing one in use at the house of a friend, I learned from a young Swiss gentlemen who had presented it to her, that they were in general use in his native country, and he had accidentally seen a cask full at an importers, which were unsaleable in New-York, and had become rusty, and looked upon as old iron. I procured a dozen and distributed them among my friends. They soon became bright from use, and are universally classed among those articles which "we wonder how we ever did without." These are made of rings of iron wire, No. 15, linked together, and are about six inches square. I counted fifteen rings on one edge. One outside row of rings is only connected with the other at each end and an inch or two in the middle, which makes two loops to hang it up by. Every kitchen maid who has scoured the inside or outside of a kettle with it, pronounces it better than scraping with a knife or scouring with cloth and sand. They are very flexible, and I imagine must be like chain armor, which I have read of but never seen. We also find it useful to put under a pot or kettle hot from the stove, when we wish to place them on a table. We have used ours two years.

There is another iron convenience I have used six years, and which is as good as ever, that I would recommend to house-keepers—galvanized iron telegraph wire for clothes lines. It never rusts, need never be taken in, never breaks down and lets the wet clothes fall to the ground and have to be rinsed again. I hope my experience may be of some use to the readers of the CO. GENT., to which paper I feel much indebted for valuable information on various subjects. M. S. T.

Rose Hill, near Balston Spa.

RAISING DAIRY COWS.

In many sections of the Eastern States lying adjacent to cities and manufacturing towns, the demand for large quantities of milk at favorable prices, has stimulated the efforts of farmers for the production of milk to such an extent that stock-raising has been sadly neglected. In the milk-producing districts of Massachusetts, farmers cannot afford to keep their calves long enough to make passable veal of them, but hurry them away the day they are dropped to the speculator, who knows how to prepare them in such manner that the unsuspecting laboring man will buy the cheap meat and take it to his kitchen.

A few years ago, when our dairies could be replenished with tolerably good milkers from New-Hampshire and Vermont, at moderate prices, this system was to some extent excusable; but since the great demand for beef for army consumption has turned the attention of breeders to beef-producing rather than dairy qualities, it has become impossible to purchase good milkers without paying exorbitant prices. Mark the change which has occurred in five years. The New-York Tribune of Feb. 25th, 1860, quoted good milch cows at $40 each, while the same paper, Feb. 25th, 1865, quotes them at $75@$90, and remarks that some are at $100, and even $130. No farmer can afford to buy cows of uncertain value as milkers, at these prices, when hay is worth $40 per ton and meal $2 per bushel, even if he receives fifty-two cents per can for his milk.

Working cattle may be produced elsewhere cheaper than here, and the purchaser is not so likely to be deceived in regard to their value, as their profitableness does not depend so much upon local circumstances as that of cows. But breeders and drovers have never taken special pains to furnish us with milch cows adapted to our wants, and they certainly will not do it now, when beef is worth $20 and working cattle $200 to $300, and when a large number of cattle breeders have gone crazy for sheep—hazarding more for a Merino buck than did Jason of old for the golden fleece.

We need in this section, above all others, a breed "to the manor born," of superior milking qualities, and adapted to rough pastures and severe winters. Such a breed can be secured if farmers will make a temporary sacrifice, and give to breeding the attention that is necessary. The manner in which it may be obtained was suggested in remarks by H. H. Peters, Esq., of Southboro, before the Hopkinton Farmers' Club.

Mr. P. remarked that at the commencement of his farming operations he was in possession of a very good herd of native cows, but in attempting to breed from them he was repeatedly disappointed. The progeny of some of his best cows proved to be quite inferior milkers. Not more than one in four was a valuable cow. He found that he had not paid sufficient attention to the qualities of the sire. He would advise those who desired to raise up a herd of valuable cattle, to select the best milkers and take them to a thoroughbred bull of such breed as they preferred. Cows to breed from should be well kept. He would rather take the poorest cows in the country, and put them on good feed for profit, than take the best and keep them ill. There had been instances in this State of superior animals from Thorne's stock, purchased by wealthy men at fancy prices, being so much deteriorated in consequence of neglect, that they could not be sold at the prices of ordinary cattle. On the other hand are the magnificent cattle of John S. Anderson of Shelburne, and Matthew Smith of Middlefield, Mass., which have been raised up from ordinary cattle by judicious crossing and superior keeping.

Cows should be kept well before they drop their calves, so as to strengthen the fetus as it is forming.

The best way to raise calves is to turn them out in a good pasture with a farrow cow. When the cold autumn storms come on, the calves should not be neglected. They should not be left to the insufficient shelter of the woods or the fence, but should have a good warm place in the barn, and be well fed. He was feeding calves almost entirely upon corn stover, not throwing it into the yard to be trodden under foot, (that was the way to make cattle wasteful, for calves, like children, would be frugal or otherwise, according to their training,) but cutting it quite fine and steaming it, and sprinkling a little bran upon it to give it a flavor. He had fed oil meal to calves with great success. In short, keep the best stock you can get, and keep it well. Upon keeping well depends your success. GEO. A. ADAMS. *Hopkinton, Mass.*

SORGHUM FOR FODDER.

I have seen several articles lately in your paper on the culture of corn for fodder, and I have been surprised that no one has tried sorghum for the same purpose. In the Patent Office Report for 1861, there is an account from the south of France, which states that forty-eight and a half tons (green, of course,) have been raised on one acre of ground. How much it will lose in drying, I have no idea; but this much I do know, that sown broadcast at the rate of two bushels to the acre, it will yield more feed than anything I have ever tried in the way of grass. I have tried it for two years and have found the yield truly surprising—I should think more than two tons of dry feed, but never having weighed it, I cannot speak positively, but am perfectly satisfied that it is far superior to anything I have ever tried, not even excepting *Hungarian grass*, so much lauded some years ago.

Sow it in good corn ground, as early as it can be put in good order; harrow smooth, the finer the better; and when the seed is sown, go over it with a bush; it must not be covered deeply, and if the seed is good, it needs no soaking. Let those who think so favorably of corn fodder try the sorghum, and I do not think they will bother with corn.

My horses and cows prefer it to any kind of feed I can give them; I have tried them repeatedly, and they will leave the best timothy for the sorghum and eat it up clean. The blades we pull from the cane we grow for syrup, are preferred by the stock to corn blades, and they will devour it with the greatest avidity. By sowing early, it can be cut with a strong cradle at the best time for curing properly, after being cut a few days. I have it tied up in bundles and cocked the same as wheat or oats. The quantity of seed sown to the acre prevents the stalks growing

thick, which renders it easy to cure. I could make this communication much longer by amplifying words, but I have a particular dislike to windy articles on useful subjects, which causes me to be so laconic; all I wish are plain facts, told in as simple language as possible, so that all can understand. If this plan were adopted, there would be more room in your valuable paper for useful articles. T. V. P.

Mt. Carmel, Ohio, March 4, 1865.

Transactions N. Y. State Agricultural Society.

The Transactions of the New-York State Agricultural Society for 1863, forms a volume of over 800 pages. Its contents have been seldom if ever excelled in value, although necessarily including the usual amount of matter relating to the business proceedings of local organizations, only interesting as placing on record the history of their existence and progress.

A tabular statement shows that the aggregate receipts of the Society, from its organization and First Annual Fair in 1841, down to and including 1863, were $188,822.19 from Fair receipts, and $39,637.11 from other sources—total $228,459.30—or an average of about $10,000 per year, for 23 years, expended in the promotion of Agricultural Improvement. It would be interesting, but perhaps impracticable, to obtain the aggregate receipts of all other agricultural and horticultural associations in the State, during the same period, in order to show the sum total voluntarily devoted to these objects—an amount which could not be otherwise than exceedingly creditable to the public spirit of our farmers and fruit growers.

Several of the more important articles in the volume have been already noticed, as extra copies were furnished in pamphlet form—among them the addresses of Dr. Fisher and President Faile, Mr. Goodrich's paper on the Improvement of the Potato, etc., Mr. Peters' valuable report as State Assessor on the Agricultural and other Resources of New-York, the list of Short-Horn prize owners, &c. Dr. Hough contributes a paper on Agricultural Statistics. Mr. Cornell reports his visit at the Royal Agricultural Society's Great Show at London in 1862, as a Delegate from our Society, also at Rothamsted, the residence and experimental farm of J. B. Lawes, Esq. Dr. Parker presents a full article on the Propagation of Native Grapes, shortly to appear, we believe, in book form. Mr. Gould of Hudson, gives the results of his laborious investigations at the West into the growth of the Sorghum and Manufacture of Syrup and Sugar from that plant, and from the Sugar Beet. Dr. Fitch's Ninth Entomological Report is devoted to Insects Infesting Gardens, including the Northern Tobacco or Potato Worm, the Potato Beetle, the Garden Tiger-moth, the Corn Cut-worm, and the Nebraska Bee-killer. Agricultural Statistics are published from the counties of Cayuga, Greene, Herkimer, Livingston, Onondaga, Oswego, Rensselaer, Saratoga, Steuben, Wayne, Tompkins, and a part of Niagara.

From a correspondent, a statement appears of the number of Reaping and Mowing Machines manufactured at the city of Auburn during the year 1863—aggregating, at that point alone, 6,900 machines, at a cost of $180,000 for labor and $240,000 for material, and employing some 700 men.

A correspondent at Bengal, India, refers to the successful use of the Steam Plow in the Indigo growing regions of that country.

Reports are presented from Thirty-five County Societies. Only 21 of them give a statement of the receipts of the year, but we find that the aggregate of these twenty-one amounts to the respectable sum of about thirty-six thousand dollars, ($35,897.55,) and it would not probably be an over-estimate to say that the total sum raised by the local societies of the State in the year 1863 was above rather than under $50,000. Queens leads her sister counties in receipts, the aggregate of that Society being $4,795.75, while Albany stands next with $4,396.16. St. Lawrence reports $2,369.77, and Broome and Duchess each over $2,200. Reports are also given from thirty Town and Union Societies, and Farmers' Clubs.

There are many other points to which it would be equally interesting to refer, and from several of the articleswe hope to present extracts as opportunity permits.

Yellow-rumped Warbler---*Dendroica coronata.* GR.

Our figure represents, this week, the charming little bird which is known in the vernacular as the Yellow-rumped Warbler—in science as *Dendroica coronata*, GRAY. It is sometimes called *Myrtle-bird*, owing to the fact that it feeds at one season of the year almost exclusively upon the berries of the myrtle, (*Myrica cerifera.*)

In Pennsylvania this bird is only a passing visitor, seldom remaining over three or four weeks at a time. Early in October it arrives here from the north. It remains here about three or four weeks, and then leaves us for the Southern States, where it spends the winter. It is to be found in Georgia even as late as the middle of March. About the last week in April it reappears in Pennsylvania. It only remains, however, for eight or ten days, and then it takes its departure for the north, where it breeds.

While passing through Pennsylvania the Yellow-rumped Warblers associate together in flocks of considerable numbers. Their food consists of insects and caterpillars, as well as the berries of the myrtle before referred to. J. P. NORRIS.

* *Audubon, Birds of America*, II. 1841, 23. (*Et sequenter.*)

CURE FOR A COLD.

Take a teaspoonful of fine salt in the mouth and swallow it as dry as possible, and then drink a half tumbler of cold water. This will relieve the cough if there be any. This is to be taken on going to bed. In some cases it may be necessary to repeat it two or three times.

Worcester, Mass. JOS. E. PHELPS.

Cure for Chillblains.

Take a flannel cloth and saturate it with petroleum or carbon oil, and wrap around the feet before going to bed. S. H. R.

DAIRY FARMING IN SUSSEX CO., N. J.

EDS. CO. GENT.—I see from time to time inquiries in the CO. GENT., of the "modus operandi" of making butter—and though you have published frequently copious details of the manner pursued in different sections of the country, I thought a few lines from the great butter and iron county of New-Jersey might not be uninteresting to some of your readers. I believe Sussex Co. stands unrivaled in the quality of her butter; this is owing probably more to the quality of her grasses and springs than to the manner of making the butter.

The cow being the machine by which the different grasses and grains are manufactured into milk, her selection is looked upon by all successful dairymen of the first importance.

We have a breed of cattle here, originally similar to those found in almost all parts of the country, viz., the Native or mixed. We have also the Ayrshire, the Durham, and the Devon; each here, as elsewhere, have their admirers.

The Native, of course, is the main dependence of our dairymen. She has been bred for years for the pail, and has arrived in many cases to a great degree of excellence. The form, size, and color, are all looked upon as second in importance to the yield at the pail.

The soil is generally limestone, and of course our wells and springs have "hard" water,—(contrary to Mr. Dickinson's teachings, that good butter cannot be made with hard water.) Our farms vary in size, ranging from fifty to three and four hundred acres, and occasionally much larger.

The rotation adopted is usually corn, oats and wheat, or rye and grass. That is, a hundred acre farm will usually be divided into five or six fields, and the manner of cultivating somewhat as follows: First year, corn, with most of manure; second, oats, and occasionally barley or flax, with no manure; third, wheat or rye, with light dressing of manure; fourth, and sometimes fifth, grass, usually clover with some timothy—clover (red) however is often sown alone, as many prefer it to timothy. Such a farm is usually expected to carry from fifteen to twenty cows, besides calves and working stock. We find two men and women usually sufficient to manage a hundred acres rotated in this manner, and upon the whole the most advantageous, as yielding the greatest return and maintaining the fertility of our soil. There are however exceptions to this rotation, some farms carrying cows almost exclusively.

The manner of managing the dairy, varies not a little with different farmers. The cows are expected to come out in fair or good condition in spring, and drop their calves in April or the early part of May; some preferring earlier, some later. Owing in a measure to quality of hay, amount of feed, &c., the calves from the choice cows are selected to raise, the balance pelted or vealed. After the veals are got off, comes the butter season.

The milk is usually drawn and carried to milk-room by all hands, there strained in tin pans holding about ten quarts, and allowed to stand from twenty to thirty hours, according to state of weather—usually until it becomes thoroughly thickened or loppered to the bottom of pan; then poured into a barrel-shaped dasher churn, tempered to about 60° Faht., (which however is usually done by the senses,) and churned for about an hour, with dog, sheep, or horse-power, according to size of dairy. When the butter has come, it is taken out of the churn, salted with about an ounce of pure Ashton salt to one pound of butter, worked and washed until the buttermilk is removed, when it is ready to pack. This is usually done in half-firkins or returnable tubs, holding forty to fifty lbs., until the end of May, when it is put into firkins, made of white oak, thoroughly scalded and soaked, holding about eighty lbs., until the heated season is over, when it is again put into tubs until the close of making, which is about the first of December, when the cows are allowed to go dry, dairymen generally thinking it too expensive to make butter in winter.

The buttermilk is considered quite an item with us, in connection with pork-raising. It is commonly run into a hogshead or vat from the churns, and allowed to thicken, when it is fed to pigs, causing a very rapid growth. Some care is required in feeding, for if fed too new it causes scouring.

The method I have adopted is this: I allow about one pig to a cow, preferring to have them dropped quite early. They are fed carefully until about six weeks old, when they are taken from the sow and fed milk until they get too large for the supply, when I commence boiling corn in a large furnace kettle; when thoroughly boiled mix with the milk. I find this feed to shove pigs faster than anything I ever saw or heard of. Dairymen should select a fine-boned breed. I have made a lot of pigs on this feed at ten months old, average a pound a day, dressed weight.

Andover, N. J. SUSSEX.

USE OF REFUSE SALT.

A few years since we found a merchant digging a hole to receive the refuse salt of his fish and pork barrels. We gave him a trifle to save it for us for manure.

We have since used it for cattle, for we believe they need salt. We sometimes rinse it with water, but we find that they eat it as well as clean salt.

A few days since in selling me a lot that he had saved, the merchant remarked that "he supposed it had lost all its strength." I was too anxious to secure a good bargain, i. e., a fair bargain, to controvert his opinion.

One of our closest, most saving farmers empties his pork salt into the brook, as he considers "it has lost its strength." If the pork is sweet, it is just as good as new for use again.

We have heard that beef-brine was poisonous to cattle. I think this has happened from the excessive quantity taken, rather than from its being poisonous. I use this for the compost heap, asparagus beds, or plum trees. G.

MORE ABOUT METHEGLIN.

I noticed in the last number of the COUNTRY GENTLEMAN of 1864, that one of your correspondents wished to know how to make good metheglin; and in a later number, a formula how to make this most favorite beverage, from the pen of Anna. Her method undoubtedly is a very good one, when small quantities are desired. I once had an opportunity of testing some that was very similarly made, that I thought was very excellent indeed; but as people's tastes are not all alike, I will add one that is intended to be made upon a larger scale than "Anna's," although it may not be any better, and perhaps not as good. Those that try both ways, will have a fair opportunity of judging for themselves. It s made as follows: — Take fifty pounds of honey, twelve gallons of water; mix in a small clean cask, and stir daily until dissolved; then add half a pint of yeast, and the decoction of half a pound of hops boiled in three gallons of water. Mix well and ferment. Any quantity may be made in like proportion. Like all stimulus liquors, age adds greatly to the strength of this wholesome, refreshing, and most delightful drink.

Prospect Hill, N. Y. C. R. C. MASTEN.

SOWED CORN---By John G. Webb.

In the fall of 1862, I wrote an account of a crop of sowed corn, which was published in the COUNTRY GENTLEMAN, and attracted considerable attention.

In that article I asserted that I had, by actual weighing, produced sowed corn at the rate of 36 tons per acre on upland, and by calculation demonstrated that 108 rods of such corn should support a cow 365 days in milk. At the same time, however, the cows, upon the feeding of which these results were founded, were receiving what was assumed as one half of their food from the after-feed of rich meadows. Reflection upon these facts has somewhat modified my conclusions upon the value of sowed corn fodder, for I should consider it questionable whether it were possible to obtain from two-thirds of an acre annually, the requisite *mineral* elements of a cow's bodily wastes and for her milk. As to the quantity of food, such as it is, the facts stand out, and cannot be gainsaid, and were confirmed immediately after by Mr. S. W. Hall.

In 1863 I produced another crop of ten acres upon the same land on which it grew the previous year, and when the State fair was in progress at Utica, I had the pleasure of showing my crop to several gentlemen from this State and Canada.

It was a magnificent crop, and received the encomiums it deserved. As it was a large field and not liable to the errors that belong to *averages*, I propose to give the results entire of the cost and products:

COST IN 1863.

Plowing 10 acres of flats	$20.00
10 loads of manure upon some thin places	10.00
Harrowing	10.00
30 bushels of seed (western corn)	30.00
Sowing, one acre per day, man and horse	15.00
Labor of women to follow the drill	5.00
Once cultivating	15.00
Cutting and binding and stacking	87.00
Hauling 120 loads	50.00
	$242.00
Interest on land	70.00
Taxes, &c	13.00
Total cost of 10 acres in 1863	$325.00

PRODUCT.

The crop could not be surpassed, as it seemed. A portion would average twelve feet in height, but probably ten feet would express the average of the whole field. It stood in rows two feet apart, and about two and a half inches between the stalks. Where they stood thinner than that, every stalk had more or less corn on it, but valuable as this may be, I consider its value more than compensated for by greater toughness of the lower end of the stalk.

We tried to run a mowing machine in cutting it, but it proved a total failure. It was cut with a corn knife in the ordinary manner, bound, and set up in a careless way, till it should dry out sufficiently to bear economical transportation.

We commenced cutting on the 21st of September, and had finished drawing and stacking on the 16th of October. It had to be drawn nearly half a mile, and had dried out sufficiently to enable us to draw about 75 bundles to a load. These bundles would average at that time about 40 pounds, making 3,000 pounds to the load, or 180 tons in all. It was drawn to a dry field contiguous to the cow stable, and there carefully stooked in about 600 stooks, each stook consisting of about 15 bundles set up by two men, and carefully bound by about three bands—stalks.

In these stooks the corn was preserved in a beautiful manner. Without souring, it dried away, assuming a straw color. I weighed the bundles at intervals, and about the 10th of December, when it had become perfectly cured, and might, without injury, have been piled up in a hay mow, it had lost about one half of its weight when drawn away, or about three fourths probably of its original weight, and weighed about 20 pounds to the bundle, 300 to the stook, or 9 tons to the acre.

Referring to the cost we have—

90 tons dry corn fodder, cost	$325.00
Or per ton	3.60

VALUE.

I was then feeding 71 cows, and from the date of the commencement of cutting, Sept. 21, to New Years, they received no other food except a limited supply of after-feed. At most, there was not enough of that for the entire feed of more than one third their number, for say one month, and calculation shows that 71 cows at 25 pounds per day for 100 days would consume 177,500 pounds—180,000 pounds constituting 90 tons. This estimate is farther confirmed by the fact than in the early part of the season, each cow did receive just one bundle per day, an amount which, as the season advanced, was increased to two or more.

Now these are facts, and if they do not teach the value of corn fodder as a standard and leading crop in the dairy districts of the United States, what do they teach?

There are some observations that seem important with reference to this subject.

SOWING.

For the main crop in the latitude of Central New-York, the 10th of June seems to be the correct time. You have to avoid two dangers to your crop, immaturity and too great maturity. If immature, the stalk is brittle. You cannot find suitable bands to bind it, and your crop is subjected to great loss; besides it is not so sweet or valuable as at a later period, and cannot be cured so well. If, on the other hand, it is too mature it becomes woody at the butt, and cannot be eaten. Without doubt, also, its saccharine qualities, are, after a certain point, greatly reduced. At the right point it contains a great deal of sugar, and may be eaten—the lower joints—with satisfaction by any lover of sweets. You must also steer clear of autumnal frosts if you can. All these considerations seem to point to about the date referred to for sowing.

FEEDING.

I can see no use in spending time, which is money, to cut sowed corn fodder for feeding. I was surprised to see the advice from P. to cut the green fodder in summer; nothing could be more useless; and as to cutting in the early winter, I could never see any necessity for it. As already stated, there is no waste from a crop of good corn fodder. *Utica, N. Y.*

The Annual Register.—"The ANNUAL REGISTER of RURAL AFFAIRS for 1865," edited by J. J. THOMAS, author of the "American Fruit Culturist," is a little volume of inestimable value to the farmer and gardener. The eleventh number, just published, contains 130 engravings, and useful and trustworthy information, hints, and suggestions respecting the more important matters connected with rural affairs. Published at Albany, by LUTHER TUCKER & SON.—*New-York World.*

THE CULTIVATOR.

ALBANY, N. Y., APRIL, 1865.

☞ In deciding the Awards upon the Essays received in competition for the COUNTRY GENTLEMAN Prizes, the committee to whom we submitted these essays, reported to us after examination that in several cases there were especial merits rendering two or more of them too nearly of equal value to admit of selecting one as in all respects superior to the rest. We therefore advised that in such cases the prizes should be properly divided between the contestants, as it would be manifestly unfair to pronounce a single one *the best*, when there was another which as a whole could not but be regarded as fully its equal. Since receiving the more formal report subsequently prepared, we have carefully reviewed it, in connection with the Essays themselves, and cheerfully coincide throughout in the conclusions as therein stated, which will be found below:

The Essays on Turnip Culture.

In selecting such essays, among the twenty-one presented, for the premiums, it seems proper to enumerate a few of the leading points of excellence:

1. Thorough previous preparation of the soil and eradication of weeds.

2. Copious application of best manures.

3. Ridge culture as lessening labor in hoeing and allowing cultivator to run nearer the rows—and on heavy soils affording the greatest product.

There are several other points of minor character, such as best varieties, home manufacture of concentrated manures, cheapness of harvesting, best modes of keeping, &c.

Nos. 7 and 9 appear to embrace more of these points in a distinct manner than the others, No. 7 being particularly valuable on the subject of manure, and in successful winter feeding of roots to sheep, making them weigh 100 lbs. dressed. No. 9 has a fuller description of varieties, and is more systematic in its arrangement. We propose therefore that the first prize be divided between these two essays.

No. 10 is a well written description (but less in detail) of the management of a very extensive and successful farmer; and No. 3, although deficient in horse and ridge culture, contains a statement of various experiments with manures which may prove valuable suggestions to others. We propose therefore that the second premium be divided between No. 10 and No. 3.

Many of the other essays also contain valuable hints which are marked for future publication. Among these No. 16 points out very distinctly the importance and practicability of raising early crops of the flat turnip for the late summer and early autumn feeding of sheep by folding—a suggestion of great importance to farmers who become deficient in feed at this time of the year, and who may thus, instead of sunburnt pastures, give their animals ten to twenty tons per acre of fresh succulent food.

In accordance with this report, we therefore award the First prize conjointly to the Essays respectively marked No. 9 and No. 7. The former, which bears the motto, "More roots, more stock; more stock, more manure; more manure, better crops"—was found to be written by R. GIBSON, farmer for Wm. Beebe, Northport, Suffolk Co., N. Y.—the latter by WM. ANDERSON, Rockford, Illinois. In a similar manner, the Second prize is divided between the Essays severally marked No. 10 and No. 3—the former of which is by J. C. SNELL, Edmonton, Canada West, and the latter by AUGUSTINE MATSON, Lysander, N. Y. Mentioned with especial commendation No. 16, signed "J. B.," and written by GEO. GARDNER, Shrewsbury, Penn.

Mr. GIBSON'S Essay is published the present week. The others will follow, with subsequent selections from those not sharing in the awards.

The Essays on Mutton Sheep.

The main object of sheep feeding being the profit yielded' the decision upon the merits of the several Essays submitted rests largely upon the success with which their several authors (1.) point the way to the profitable conduct of the undertaking—sustaining the assertions made by facts derived from their own experience, in all the details of management and feeding.

2. The characteristics of the several breeds offering for the feeder's selection, form a second and important point.

3. A third point consists in the elucidation of the question how far the turnip crop can be advantageously employed in this country, for feeding sheep both through the autumn and winter.

The Essay marked No 5 excels in the minuteness and accuracy of the tables of experiments, and in the precision of the directions given. In these, and other respects, it is evidently the result of long and careful experience on the part of the writer.

The Essay marked No. 1 is fuller in its descriptions of the merits of different breeds, derived from personal observation. Both No. 5 and No. 1 will afford considerable light upon the third point above referred to.

The Essay marked No. 3, although short and imperfect, contains a valuable suggestion in management by which two summers are obtained with one wintering—a point worthy of particular attention. No. 7 describes the mode of management to be adopted when the sheep are purchased in autumn for winter feeding only; and is evidently successful, although the precise amount of profit is not indicated. This mode of management, although not to be recommended generally, may prove advantageous under certain circumstances. No. 6, after giving some general account of breeds, furnishes many details for good every-day attention, which may be useful to inexperienced sheep-raisers. The other essays contain valuable matter, which is mostly superseded by the above mentioned.

There was some doubt as to the propriety of dividing the first prize equally between Nos. 5 and 1, and the second between Nos. 3, 7 and 6; but on a review of the whole, and with this explanation as to the prominent points of excellence in each, it has been concluded that the terms of the original offer will best be met by recommending the first prize to No. 5 singly, and the second to No. 1, with especial commendation to the authors of the essays numbered 3, 7 and 6.

In compliance with this suggestion, we award the first prize to the author of Essay No. 5, JURIAN WINNE, Bethlehem, Albany Co., and the second prize to the author of Essay No. 1, GEO. GARDNER, Shrewsbury, Penn.

The authors of the commended Essays are—No. 3, R. G. COFFIN, Duchess Co.; No. 7, E. SLEIGHT, Duchess Co.; No. 6, JAS. S. MCCALL, Wayne Co.

Sheep Breeders' and Wool Growers' Association.—The winter meeting of this body was held at Syracuse, Feb. 22d, eliciting a fair attendance of members from distant parts of the State, and a considerable turn out from Onondaga and adjoining counties. The number present at the afternoon session may have been upwards of two hundred.

It was the general anticipation that matters bearing upon the Spring show, which it is proposed to hold, would form the principal business of the meeting. There was, however, no business whatever transacted, with the exception of the organization of the Executive Board on the evening of the 21st—the sessions on the 22d being wholly occupied by discussions, mainly of a practical and useful character it is true, but beyond the recommendation of a higher State tax on dogs, and one other point to which we shall allude below, having little reference to the immediate interests of the Asso-

ciation. It was verbally understood, although we believe no announcement of the kind was publicly given, that a liberal proposition for the holding of the Spring show was received from the citizens of Canandaigua.

The first resolution proposed for discussion was simply to the effect that all the different breeds of sheep should be duly encouraged by the Asociation; and it only elicited some very general remarks from Major Brooks of Wyoming, and one or two other speakers. The second resolution, endorsing the present wool tariff of the United States, failed to bring forward any body who had made the matter a subject of particular study, and was referred to a standing committee of the Board on Congressional Legislation. The third resolution, urging a higher dog tax as above alluded to, drew out several interesting statements, and was passed unanimously.

The pulling of wool, its cause and cure, was next introduced for discussion. The opinions expressed varied considerably. Tobacco water was recommended by Messrs. Avery of Fulton, Ennis of Wayne, Noyes of Ontario, and others, and mercurial ointment by Plum of Onondaga and Healey of Steuben. The President had known both to be successful. Mr. Lalor of Oneida suggested precaution as to the strength of the mercurial ointment applied, as it varies as sold, and one speaker had stated that he diluted it with three parts of lard, and another with only one. Kerosene had been tried, stopping the wool pulling, but leading to the occurrence of abortion. Avery of Fulton thought exposure the cause of the difficulty,—Champlin of Steuben, and Plum of Onondaga, that it is high feeding,—Noyes and others, that the heating of the manure had something to do with it, also imperfect ventilation,—Crandal of Madison, that it is a bad habit,—Munson of Seneca, that it is hereditary, and so on.

Rheumatism in sheep, its cause and cure, consumed the remainder of the afternoon session. Interesting statements were made by the President, Messrs. Plum, Avery of Cortland, Baker of Onondaga, Noyes, Brooks, Healy, Danforth and Wilcox of Onondaga, Burgess of Rensselaer, and others. Mr. Greer of Ohio, who attended the meeting, mentioned that the disease has not as yet, to his knowledge, appeared in that State, nor, with a single exception in Illinois, in any part of the West.

The evening session opened with a discussion upon the cause and cure of goitre in sheep—a difficulty which appears to have prevailed within a few years past extensively in nearly all parts of the State. Very little evidence was brought forward to show that it can either be alleviated or prevented, unless by the avoidance of everything either in management or breeding, which can tend to weaken the constitution and lessen the vital powers of the animal. And the great lesson of the meeting—devoted as it was, so largely to the discussion of diseases to which by almost unanimous assent the "highest bred" Merinos were pronounced far more liable than any others—seems to us to be clearly one of warning, above all things else, no matter what reputation an animal may have, what price it brings, or what fleece it yields—that it must be made the first question with the judicious flockmaster fully to satisfy himself that nothing in its descent or treatment should render its offspring lacking in that vigor and healthfulness without which all other good qualities are nugatory and useless. To listen to the sickening details given by one or two of the speakers, of a whole crop of lambs deformed into monstrosities of every kind—carted away on a stone-boat as soon as dropped—statements fully authenticated by the testimony of the President and others, of what had occurred within their own experience, was enough to satisfy any unprejudiced hearer that whatever is open to the shadow of suspicion, as likely to introduce or confirm such results, cannot be too jealously guarded against, or too strenuously denounced. And if the note of alarm sounded in these discussions has the effect it deserves, the first general meeting of the Association will not have been held in vain.

The later part of the evening was occupied with perhaps the most generally interesting of all the discussions of the occasion, upon the subject of crossing the different breeds for the purposes of farmers not engaged in breeding flocks of pure blood. To this question and the facts elicited, we shall recur hereafter, as it requires more space than is now at our command. The speakers gradually lost sight of the subject of debate, and turned to that of the shrinkage of wools, and the imperfect and slovenly manner in which fleeces are often sold. It was at a late hour that an adjournment was finally voted.

Since the above was written we have received a note from the President convening the Executive Board to meet at Canandaigua, on the 7th of March, at 5 P. M., when the arrangements for the Spring Show are to be matured. The questions likely to arise in making out the premium list, in appointing judges, and in other preparatory details, are such that a full attendance is particularly desirable.

Cheese Show.—Notices of various Shows of Cheese in Great Britain, suggest to us the propriety of submitting to the State Cheese Manufacturers' Association the idea of instituting a similar exhibition, to take place at the time of and in connection with the State Fair at Utica the coming autumn.

With the acknowledged importance, particularly as regards the foreign trade, of encouraging the manufacture of a superior article, nothing could be more legitimately within the sphere of that Association than such a Show, and with premiums of a somewhat liberal amount, together with the interest which the manufacturers themselves should take in the subject, we do not see why a display of unprecedented extent and excellence might not be made. The premiums might be made up by a special entry pre-paid for that object by those competing, or if the funds of the Association would permit by a direct appropriation for the purpose, as might be preferred; and we think we may undertake to say in advance that any proposition which may be submitted from the Association to the State Society would be most favorably received, and all the requisite space could be furnished or arranged for to suit the probable demand.

If this suggestion meets the approval of the officers of the Cheese Manufacturers' Association, we should be happy to have them communicate with us on the subject before the close of the current month. It may perhaps be expected, if the show is decided upon and due notice to purchasers given, that they would be present in sufficient numbers to dispose of all that may be exhibited on favorable terms.

Working Bulls.—This question has been brought before our readers occasionally by those who have successfully adopted the practice in this country. A writer in the Mark Lane Express advocates it from considerable experience. After describing his mode of breaking, he says:

"Indeed, it is remarkable how soon a surly bull is taught temper and obedience. A man of good common sense, courage, and firmness will very soon make the most surly rascal tractable and obedient, providing he is not actually vicious. A surly, ill-tempered, vicious bull is best fatted off, to be slaughtered; no danger ought to be incurred by teaching him his power for evil. I have said we always work the bull in bridle, collar, and cart-saddle. I don't know a better course. The bridle is a common cart-horse bridle, made to fit

the head of the bull, being, of course, larger at every point; the frontlet and blinkers rather out of proportion, larger; the head-strap made to buckle. The collar and hames are peculiar in make and form, both being made to match each other. The collar is nearly three feet long, opening at the throat, where it is fastened by a strong strap and buckle: it is made very full, and is well stuffed or padded on the top (which in the horse collar is the bottom, being, as it were, worn by the bull wrong way up), so as to form a good firm cushion, by which the chief lift or pull of a bull is given. The sides of the collar are also more stuffed or padded than the ordinary horse collar, which, of course, makes the whole collar much broader, as well as longer."

☞ The gratifying competition elicited for the Prizes offered by us for Essays a few months since, and the value of the various papers submitted, induce us now to present the following:

1. Rotation of Crops.—For the best Essay derived from the experience and observation of the writer, on the rotation of crops in general farm management, adapted to the practice of this country, including an outline of the treatment of the crops comprising the rotation—*Twenty-Five Dollars.* And, for the 2d best, *Fifteen Dollars.*

2. Fine Wooled Sheep.—For the best Essay on the Breeding and Management of Fine Wooled Sheep, including both flocks that are mainly kept for breeding purposes, and those of larger size, either at the east or west, where the wool clip is the great object, and economy in attendance an important requisite—*Twenty-Five Dollars.* And, for the 2d best, *Fifteen Dollars.*

Competing Essays to be sent to this Office by the 1st of June next. The privilege retained by us of publishing both the successful and unsuccessful Essays, in part or in full as advisable.

1. The subject of Rotation of Crops is one to which we pay too little regard. It is the hope in offering these prizes to draw out not only the experience of those who have given it especial attention, but also the results of any experiments that may have been instituted to throw light upon it. It is popularly held that some particular crops succeed poorly after others—how far are such impressions well-founded? What systems are followed by the best farmers of particular localities? Are these systems followed on well-established grounds, or are they susceptible of improvement? The subject is one of considerable scope, and in the proper treatment of it, a very valuable and interesting essay may be produced.

2. The Breeding and Management of Fine-Wooled Sheep may comprise not merely the practical points involved, but also the general characteristics of the sheep. Is a large or small sheep preferable as a wool-producer, and under what circumstances should the preference be given to either? What style of fleece in the long run will be likely to pay the best? And, above all, what system of treatment is surest to preserve and promote the health and vigor of the flock?

On both subjects we leave the manner of treatment much to the discretion of writers, as each will be likely to do best by following his own mode of thought, and stating whatever he can, of his own knowledge, that is appropriate in their discussion. Compilations from other writers, and articles already in print, are not desired; and, the object being purely agricultural and not literary, defects in orthography will form no bar to an award, although it will be of great convenience if competitors will have plain copies made to send us, the paper written on but one side.

Raisin Grapes.—We have received dried specimens of the "Walter grape," a new variety raised by Ferris & Caywood of Poughkeepsie, N. Y., a seedling of the Delaware. The grapes were left accidentally in a drawer until lately found in this condition. They make a respectable raisin, but not equal to the imported, being less sweet, and with a rather thicker skin. We have not tested them with other dried specimens of the Delaware and other sweet varieties. As the grape crop will probably become a large one in a few years, experiments of this kind may be valuable, and a large amount of a good home manufactured raisin would find large consumption in this country.

DIED—In New-York, on Saturday afternoon, Feb. 25th, Samuel Fleet, aged 65 years and 11 months, formerly publisher of The New-York Farmer, &c.

This announcement reminds us of the high esteem in which, years ago, we held Mr. Fleet, as an intelligent and earnest laborer in the field of rural improvement. In the year 1828 he commenced a rural journal at Huntington, L. I., which, after a year or two, he removed to New-York, where it was published under the title of the *New-York Farmer and Horticultural Repository.* Our first acquaintance with its pages was in 1831. Among its contributors in that year we find the names of Judge Buel, David Thomas, Noyes Darling, Alex. Walsh, Michael Floy, Wm. Wilson, Prof. Amos Eaton, and many others, eminent at that time for their efforts to advance the rural interests of our country, all of whom have since descended to the tomb. It was an honor to be associated with such men in so good a cause. Mr. Fleet, some two or three years afterwards, disposed of his paper to Mr. D. K. Minor, since which time we had entirely lost sight of him. It appears, however, that he was afterwards connected with the United States Farmer, and and later still, with the American Artisan. "He was a man of good ability, of unswerving integrity and an active christian character."

Advice to a Young Farmer.—T. W. H., a young and inexperienced farmer of Baltimore County, Md., wishes advice on a number of subjects, which we give briefly below:

1. As to the propriety of purchasing more land adjoining. We infer that the 50 acres now occupied are imperfectly cultivated, and need under-draining, enriching, &c. It would be better to improve the present farm, as fifty acres cultivated in the best manner are more profitable than 200 badly managed.

2. Heavy clay, which holds water, becomes *gradually* lighter after under-draining. The solid subsoil is penetrated in a short time with seams and cracks, which allow the water to pass off—this, in the course of time, will effect much improvement. For fear there may be some peculiarity in the soil mentioned, it may be best to try the experiment first on a limited scale, but it should be done very completely and thoroughly as far as it goes.

3. We cannot advise our correspondent to borrow money until we know his ability in managing. Poor managers would sink all they borrow, while men of more skill and energy would soon be able to repay all.

4. The amount of time required to feed cattle by soiling, will depend on the number of animals, and also upon the facilities at hand. For a small herd, hand mowing will answer; but if the field is at any distance from the stable, a one-horse wagon, with a rack, should be used for drawing. (For large herds, a one-horse, or even a two-horse mower should be used.) One day's wilting in the shade will not injure the value of fresh cut grass, but animals dislike it after it has remained long.

5. The fact that the ground mentioned is too wet for wheat, shows the great importance of thorough draining. After the land is thus drained, and has become mellow, severe droughts will not affect the crops, instead of destroying them as at present.

Albany County Agricultural Society.—The annual meeting of the Society was held at the hotel of John McEwen, in Clarksville, on the 22d of February, 1865. In the absence of the President, Geo. W. Bender, Esq., one of the Vice-Presidents was called to the Chair. J. M. Bailey, the Secretary of the Society, made his report of the proceedings and condition of the Society during the past year. D. V. S. Raynsford, Treasurer, presented his books and vouchers of moneys paid out, accompanied with his report, showing a balance in the Treasury of $74, after paying off premiums and all other expenses. A committee of one from each town, and two from the city of Albany, were then selected by the representatives from the several towns and city to nominate officers for the ensuing year. The committee reported, and the following gentlemen were elected:

President—HENRY CALLANAN, Coeymans.
First Vice President—Martin Hallenbeck, Albany.
Vice-Presidents—Albany, Wm. A. Sumner, Peter E. Jones, Wm. B. Melick, John A. Goewey; Bern, J. D. Flansburgh, James A. Reamer; Bethlehem, Samuel Van Allen, Frank Shaver; Coeymans, Aaron Hotaling, J. Evory; Guilderland, A. V. Mynders, Martin J. Blessing; Knox, Charles Clute, John Crary; New-Scotland, Henry Creeble, Geo. W. Bender; Rensselaerville, Henry Waterbury, Azza Boughton; Watervliet, Jacob Henry, Jacob Messenger; Westerlo, Horace E. Robbins, Jacob A. Dorman.
Directors—for One Year—Jacob Simmons, Bethlehem, Wm. A. Sumner, Albany. For Two Years—James Slingerland, New-Scotland, Ira Boynton, Berne. For Three Years—Henry Hilton, Guilderland, Joslin Nodine, Coeymans.
Treasurer—D. V. S. Raynsford, New-Scotland.
Secretary—John M. Bailey, Albany.

The meeting was large and enthusiastic, and was characterized by general good feeling. The propriety of changing the place of holding the annual meeting to New Scotland was considered, but the Constitution was not amended. The new board of officers were selected with great care and attention, and will command the respect and confidence of the friends of agriculture throughout the county.

Washington County.—Pursuant to a call issued Feb. 1st, to those interested in sheep husbandry, a large number of farmers and shepherds assembled at the specified place, Wilson's hotel, North Granville, on the 18th Feb. LUTHER H. TUCKER, Esq., of Albany, who was present by invitation of the Committee, was called to the Chair, and BRYAN J. LAWRENCE of Fort Ann, appointed Secretary of the meeting. Edward Hicks, and L. M. Wing, of Granville, and Isaac V. Baker, jr., of Comstock's Landing, were appointed Committee on communications. The Constitution of the New-York State Sheep Breeders and Wool Growers' Association was adopted, with some alterations to meet county instead of State wants. On motion, George Kingsley of Whitehall, and E. P. Hardin of Hartford, were added to the Committee on communications to form a committee of nominations of officers for the "Washington County Sheep Breeders and Wool Growers' Association," and, after a recess, submitted the following report:

President—BRYAN J. LAWRENCE of Fort Ann.
Vice-Presidents—Gurdon Cook, John Barker, and Fred'k Braymer of Granville; Wm. M. Holmes, Greenwich; T. S. Steele, Shushan.
Secretary—Isaac V. Baker, jr., Comstock's Landing.
Treasurer—Hon. H. W. Beckwith, Granville.
Executive Committee—George Kingsley, Whitehall; E. P. Hardin, Hartford; James Braymer, Granville; L. M. Wing, Granville; Hiram Hotchkiss, Hampton.

The Committee also suggested that a gentleman be appointed in each town to aid in furthering the interests of the Association in his town. The nominations were approved and elected to hold for one year. Luther H. Tucker of Albany, was elected an honorary member of the Association, and a Town Committee chosen, in pursuance of the Committee's recommendation. A large show of sheep, in their fleeces, and a public shearing will take place in May, at North Granville, due notice of the date of which will be given. The board adjourned to meet at the same place March 9th, to transact business relative to the May show.

B. J. LAWRENCE, Prest.
Comstock's Landing, Feb. 22. ISAAC V. BAKER, JR., Sec.

The State Wool Growers' Association.—A meeting of the Board of this Society was held at Canandaigua last week, when it was decided to hold a spring show of Sheep on the Fair grounds of the Ontario Co. Ag. Society in that place, on the 9th, 10th and 11th days of May next. The premium list will shortly be published. On a careful review of the action of the Board in its arrangement, since his return from the meeting, Mr. TUCKER, Treasurer of the Association, has submitted his resignation. Any farther inquiries as to the Show, may therefore be addressed to the Secretary, D. D. T. MOORE, Esq., Rochester, or to either of the other officers.

Association of Breeders of Thorough-Bred Neat Stock.—The Seventh Annual Meeting of this body took place at Worcester, Mass., March 1st.

After disposing of the reports of the secretary and treasurer for the past year, the following officers were elected for the year ensuing:—

President—E. H. HYDE, 2d, Stafford, Conn.
Vice-Presidents—John C. Wood, Millbury, Mass.; George Campbell, Westminister, Vt.; E. N. Jameson, Antrim, N. H.; J. F. Anderson, Windham, Me.; Burditt Loomis, Windsor Locks, Conn.; E. D. Pierce, Providence, R. I.
Secretary and Treasurer.—Jabez S. Allen, East Windsor, Ct.

It was voted to hold the next annual meeting of the Association at Albany N. Y., in connection with the winter meeting of the New-York State Agricultural Society, and the constitution was so amended as to admit of this change.

Raising Corn for Fodder.—Having seen something said in your paper in regard to corn for fodder, and considering it one of the most profitable crops a farmer can raise, I herewith send you my method for raising it, one which I like best, after trying others, as giving the most feed from a given amount of land, labor and manure.

I turn over a piece of grass ground, as poor a field as I have, near the barn, in the fall if I can—if not, in the spring—*harrow thoroughly*, just before I wish to put in my seed; then furrow for the rows about twenty inches apart, and scatter in the rows a light coat of such manure as I can best spare, green or rotten, horse, hog or cattle; then cover lightly with earth; then drop on the seed—western or southern corn, at the rate of one quart to about six rods, and cover from one to two inches deep, and let it grow till such time as I wish to feed it, not requiring any after culture, as there will no weeds start till the ground is so shaded that they cannot thrive. In eight weeks from planting, it will be a sea of fodder, too tall for a man to look over, and almost too thick to wade through in the rows, and the stalks are not so large as to be unfit for cattle to eat.

Williamstown, Vt. N. S. DAVIS.

Corn after Buckwheat.—In reply to D. McM., of Delhi, N. Y., in regard to "corn after buckwheat," I would say that some twenty years since my father had a field planted in corn, which the cut-worms destroyed entirely. He then sowed buckwheat, thinking a good crop of that better than nothing, and he did get a good crop of buckwheat. The following year he plowed it and planted corn on the same, and got a very fair crop, (as good as on the other fields;) the only objection was, that the buckwheat, left on the field from the year previous, came up and required plowing, hoeing and weeding weekly, or until the corn was too large to work, to keep back the luxuriant growth of the buckwheat that was constantly coming up. If D. McM.'s soil is adapted and season favorable, he will have no trouble getting a *good* crop of corn, providing he has hands and time sufficient to keep the buckwheat plants that will certainly appear, from getting the start of the corn.

Shiremanstown, Pa. JOHN C. COMFORT.

PRUNING VINES.—A western correspondent says, "Where vines are inclined to make too much and too small sized wood, have you tried pruning early in May, rather than in fall or winter? If not, and you have a vine left unpruned, I wish you would try it?"

Inquiries and Answers.

Osiers—Manuring Trees—Gas-Tar.—1. I wish to cut a lot of willows soon for tying grapes, &c., which will not all be used for some months. What is the best way to keep them till wanted?—2. Not being able to apply manure to my young trees last fall as intended, will have to do so this spring. Most of them have been set two years; the balance one. Will fresh, strong manure (horse and cow) that has been thrown out during winter, be good or bad for them, if applied to the surface early, and worked in during the season?—3. I am getting out a lot of grape stakes, which I would like to have last "all the time." I intend boiling them their whole length in gas tar. They are green, say 2 by 2 inches square. How long boiling will be required to do the work *thoroughly* for them? R. *Newark, O.* [1. The best osiers for tying are so tough that they may be tied in a close knot without breaking, after wilting a few hours. Hence they are best when cut successively a short time before using. There are two or three ways of keeping them when they are not at hand for cutting. One is to thrust one third of the lower ends into water—another is to pack them in large long boxes, imbedded in damp moss—and a third, and perhaps the easiest in many cases, is to bury them beneath the soil, where it will not become water-soaked.—2. Such manure may be applied to the surface between the rows, spreading it as finely and evenly as possible, and working it in gradually by the process of cultivation—which may perhaps be best effected the first time by turning two one-horse furrows from the rows upon the manure, and then cultivating down this ridge afterwards. Another way is to plow a furrow alongside of a row, fill it partly with manure and turn the soil back upon it. This, however, succeeds best if done in autumn.—3. If the stakes are quite dry or well-seasoned, a few minutes boiling in the gas-tar will render them perfectly impervious to water, and exceedingly durable. Probably half a minute would be sufficient.]

Portable Fence.—What is the cheapest movable or portable fence that can be put up? My object is to cultivate a piece of land of 20 acres this spring in onions, and the following spring to move the fence on another piece of land close by. E. R. *St. Louis, Mo.* [The kind of cheap fence to be used depends on the amount of timber at the place, and local circumstances. The best fence we have met with, most easily moved, requiring less lumber, and possessing sufficient strength, is the one invented by R. Haynes of Oberlin, Ohio, who may be addressed for the desired information. The amount of fencing for the four sides of a 20 acre lot will depend entirely on its shape. If the lot is exactly square, it will require 228 rods to go around it. If twice as long as wide, it will require 240 rods. Our correspondent doubtless knows enough of arithmetic to calculate for any other shape.]

Bean-Planter.—I wish to purchase the best bean-planter in use, drawn by one horse. I have no knowledge or experience in the use of such an implement. Will you have the kindness to say which you think the best, or would advise me to buy—quantity of ground to be planted four or five acres? R. B. C. *Ogdensburgh, N. Y.* [There are many planters offered in market in different parts of the country. The only two we are familiar with, are Emery's and Billings.' The former is an excellent one: the latter is perhaps not inferior; will drop hills 11 inches or 22 inches apart, and will deposit any concentrated manure in the hill, not in contact with the seed.]

Plowing Weedy Stubble, &c.—I have 40 acres of stubble land that was not turned under last fall after the wheat crop was taken off, neither was it pastured—the land being very rich it produced a great many weeds and grass—also the stubble was cut high. I am going this season to put it in Indian corn. Now the question that I am trying to arrive at is, whether to burn this piece of ground off, or turn under the whole amount—which way will produce the best crop? I would thank some person that knows to inform me. Also I am going to set 100 young apple trees, two years old from the graft, on a piece of new land; I would like to know just how to set them—how deep and how wide, and all about setting them—whether to cut the tops back or not. My object is to get fruit at the earliest opportunity. CHAS. FONES. [It will make but little difference in the amount of fertility derived from this old vegetable growth, whether it is burned or not before plowing. Burning will, however, enable the plowman to do his work much better than otherwise, especially if the fresh ashes is well harrowed with the top soil before turning under. If the soil is heavy or clayey, it will render it lighter to plow the dry weeds under without burning—in which case it may be well to employ a hand to rake them into each successive furrow, in order that they may be completely covered. As the weeds have dropped their seeds before this time, the burning would not probably destroy many.

Our correspondent will find full directions for setting out orchards and their management, on p. 50, vol. 1, RURAL AFFAIRS, on p. 274 same volume, and on p. 221 of the ILLUSTRATED ANNUAL REGISTER for 1865. He will also find full directions for pruning on page 165 of the latter.

Grain Binder.—In your issue of Feb. 16, 1865, M. B. wishes to know the address of the manufacturer of the Grain Binder mentioned in your paper of Jan. 26th. It is W. W. Burson, Rockford, Ill. I would say that I have used the binder, and deem it a perfect success. The figures given by the Wisconsin correspondent for price of labor are too small for Illinois, the usual wages being $2.50 per day and board. I have never yet seen five men that bound 12 acres in a day after a reaper, but it may have been done; the average falls below 10 acres; then of course the profit in using the binder would be larger, viz.:

Seven men 1 day and board, $3,	$21.00
One team 1 day and board,	2.00
	$23.00
With Binder:	
Three men 1 day, and board,	$9.00
One team 1 day and board,	2.00
15 pounds wire,	3.75
	14.75
	$7.25

Or a difference in favor of the binder of 72½ cents per acre instead of 42½ cents. The bundles hold together much better in handling, and mice never eat the bands on the stack. All that is required to make any man a good operator with the binder is to understand it before he begins to bind.

Champaign, Ill. H. J. D.

Seed Drill.—Where shall I find a hand seed drill to drill onion seed, broom corn, and other small seeds, and at what price? W. B. [All our principal agricultural ware-houses furnish them, but we cannot give the price. Will they not advertise, now that so many wish the information at this season of the year?]

Broom Corn.—I would like to see an article on the mode of growing broom corn, from the time of planting until harvested, and the average yield of brush and seed. If you will publish something of the kind in your valuable paper, you will confer a favor to many of your Wisconsin readers. S. W. M. [We have heretofore published many articles on this subject, but if any of our readers will furnish the details asked for we shall be glad to publish them.]

Laying-out Farms.—Will some of your readers who are posted in drafting, give a rule for laying off a farm—a correct scale for making a plot of a farm of 500 acres on a space the size Cochran's Farm-Book intended for the purpose.

YOUNG FARMER.

Indian Corn or Sorghum.—What are the conparative merits of Indian corn and sorghum as fodder plants, and this considered both with reference to soiling and curing for winter use? What is the best mode of cultivating sorghum, and which variety is the best for these purposes? Perhaps some of your correspondents may be able to answer the above inquiries. If they will take the trouble to do so, I think they will confer a benefit on the public as well as on "W."

Atlantic Co., N. J.

Clover Rotation.—I recollect seeing several years ago, an excellent article on the improvement of a small farm of 50 acres, by a mode of management in which the farmer always had the benefit of a *young* clover sod for his oats and corn, and an *old* sod for his wheat. He did not pasture. I think rye was used. Can you give the best plan for always securing this *young* clover sod, without allowing the ground to lay bare. A SUBSCRIBER. *Cumberland Co., N. J.* [We cannot of course, say what article is referred to, without a more definite statement. A good rotation of the kind desired would be the following:—1. Corn, with all the coarse winter manure. 2. Peas or barley. 3. Wheat, with a top-dressing of fine manure or compost, to be followed by clover, and then corn again. On very strong soils, oats may take the place of the barley. We have known this rotation to be varied by allowing the clover to remain one year, and then to turn it over and sow wheat with clover—the second crop of clover to remain two or three years, to be inverted for corn as before.]

Corn Fodder.—Is there any method of storing well cured corn fodder in a barn, so as to have it come out bright during the winter? I cut my corn at the roots in September; let it remain in stooks till November—hauled it to the barn in dry weather—husked it and stowed away the fodder over the barn floor, upon a scaffold of rails, and now I find it *very mouldy indeed*. I do not think it worth one-half what it was when first put away. I have abundance of barn room, and prefer to have it under cover if it can be kept in good order. G. W. H. *Rochester, Mass.* [Corn fodder is very liable to heat or become mouldy, unless packed away where it can receive constant ventilation, the mode of which must be according to circumstances. If in stacks, the stacks should be small, with three or four poles or rails set upright in the centre, to form a chimney for the hot air to escape. If packed away in barns, it must not be in large masses. Large varieties of corn, with coarse stalks, usually form crevices enough for some air to circulate; but small corn with fine stalks, and especially corn sown thick for fodder, packs very solidly together; and there is always enough juice in the stalks themselves, no matter how dry the leaves may be, to produce heating.]

Sudden Death of Sheep.—We have lost several sheep by what seems to be epilepsy. A sheep will leave the rack, run about the pen once or twice, fall down, struggle, and die in five minutes. A very little bloody mucous froth sometimes comes from the nose and mouth, and a little ooze after death. Careful post mortem examination shows no perceptible disease or morbid condition of any organ whatever. The largest and fattest are attacked, and those which have lambed seem exempt. They have been fed clover hay; no grain; every two or three days have been turned out in a field where a number of apple trees were dug down last fall, of the buds

and twigs of which they have freely eaten. We begin to think these have something to do with it, but would be glad to know if any one has had a similar difficulty, and the means of prevention, if any. W. H. S. *Woodbury, N. J.*

Colt.—I have a colt, two years, coming three in the spring. I cannot hitch her with a rope halter, because she will gnaw the hand piece. Is there any remedy? If so, I would like to know it. A SUBSCRIBER.

Spanish Chestnut.—In some back number I have seen the Spanish chestnut spoken of as much superior to the common chestnut. Where can I obtain budded trees from the nursery row—nearest place? Is the black walnut to be had from the nursery? G. W. H. [The Spanish chestnut and black walnut may doubtless be had at all the large principal nurseries at the Eastern cities, for example Parsons & Co., Flushing, Long Island.]

Grinding Corn in Cob.—Is it profitable to crush corn, cobs and all, for feeding hogs, or would it be the better way to shell the corn and then grind it? WM. HARRIS. [It is best to shell the corn first and then grind it for hogs. Cobs, ground between common mill stones, always produce hard lumps or scales, unfit for feeding swine, and not advisable for cattle unless sifted out. Horse mills, with steel cutters, reduce the hard lumps in cobs, and render them fit for larger animals.]

Hard Water in Cisterns.—Have you not at some time published a receipt for curing the hardness of rain water in new cement cisterns? or at least shortening the time required for the difficulty to remove. If there is a remedy, (and I think I have read one,) please give it me, or tell me where to find it. M. B. B. [We do not recollect the receipt referred to. The more perfectly the hardening process has been effected before filling the cistern with water, the less will be the difficulty. Alternate exposure to air and to dashings of water would probably best prepare the cistern. Water which contains lime in solution, is rendered soft by the application of fresh or caustic ashes.]

Basement Stables.—In answer to the inquiry whether underground stables were unhealthy, we would say that we have used one for 15 years, and have not noticed any deleterious effect. We have kept stock in both the underground and in the stables above, and we could never see any difference. There are several barns with underground stables in this vicinity, and they are so well liked that others are raising and moving theirs so as to make underground stables, but they are only walled up on one side—that next to the bank—on the other three sides they are boarded, which does not make them so damp and confined as they would be walled on all sides. W. S. ALLEN. *Vergennes, Vt.*

Crows.—How shall I effectually keep crows from pulling corn? R. K. F. [The old remedy of applying tar was always effectual. It was applied by pouring hot water on a half bushel of corn in a basket or tub, allowing it to remain only a few seconds to heat the outside of the grain, but not to kill the germ, and then pour on, say a pint of tar, and stir it quickly and rapidly. Every grain will become nicely varnished with it. In the scarcity of common tar, we have been told that gas tar has been tried, and found to injure or destroy the grain.]

Lime.—Will it be of any use to put lime on a piece of rye on which grass seed is to be sown? If it will, should it be put on before the grass seed, or after, and to what amount per acre? Please answer in the CULTIVATOR. A NEW SUBSCRIBER. [Lime is beneficial on most lands, but the amount of benefit can only be determined by trial in each particular locality. Common lime is often applied at the rate of two or three hundred bushels per acre, but it is believed that fifty bushels are equally efficacious. Magnesian or hot lime should never exceed forty or fifty bushels. It is not essential as to the time of year, but it is of great importance that it be finely and evenly spread, and not in lumps.]

Horse Hay-Fork.—In your Feb. CULTIVATOR, I notice an article in regard to an unpatented horse-fork, by J. H. Swobe, and wishing to obtain the *best* in the cheapest possible manner, and Mr. S. being so partial to it in its description and its manner of working, I resolved to get the plan (if I could,) and build it myself. Can you give me the proper information in regard to the plan of Mr. Ingalsbe? Information sufficient for me to build one *right*. W. B. D. *East Rupert, Vt.* [Mr. Swobe's article states where the information you want can be obtained, viz., in the Co. GENT. for March 31 and April 7, 1864, where the fork is accurately figured and described.]

White Willow.—I wish to state that I with several others, bought White Willow cuttings from an agent in the spring of 1864, recommended by him as excellent for hedge-fencing. I take pleasure in making public the experience of one year. As far as the directions of the agent were complied with, we have met with entire success. I purchased 1,500 cuttings, put them in according to directions, and there was not one cutting in five rods but what made a vigorous growth—some reaching the height of five feet the first year, from the stick—showing beyond a doubt that it will make a good fence in a very short time, if properly cared for the first two years; but there are several persons in this section who threw them in, any way, and never cared for them to keep weeds from choking them, and, like others elsewhere, consider that they were humbugged. S. BARNS. *Groesbeck, O.*

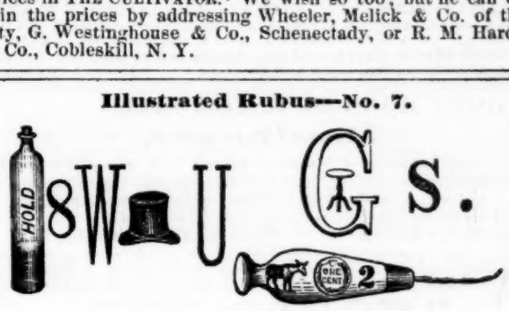
Water-Ram.—While writing I will say to your correspondent A. S. R., that when his water-ram "makes a jarring sound," it has water in the air chamber, and after being stopped off at drive pipe, service pipe, &c., must be relieved by unscrewing the nuts on the side opposite the service or supply pipe. When fully discharged of water connect and start again. The difficulty with the leather valve is effectually remedied by placing two valves together; if they have been used previously, it is no disadvantage, if somewhat softened, and hammered into a flat state again and two put together. They may take somewhat longer time to become flexible, but once at work, will last apparently without any appearance of wear, and it really amounts to a valuable discovery. J. B. O.

Farm Mill.—Where can I get a small mill for grinding corn or oats for feed? Please answer through THE CULTIVATOR. N. L. B. *Bethlehem, Ct.* [Many mills intended for horse power, have been at different times advertised and recommended. Can any of our correspondents tell us of one working easily and proving profitable after years of experience?]

Orchard Grass Seed.—Where can I get two or three bushels of orchard grass to sow in the spring, and how much per bushel; also, how much to sow per acre, and whether it is better for meadow grass than timothy? J. W. S. *Marysville, Ohio.* [It can be had at the Agricultural Store of F. A. Schwill & Brother in Cincinnati. As it is very light and coarse, it requires about two bushels per acre. As this grass is quite coarse, it is only fit for pasturage, and must be kept grazed short. Its chief value is for the early pasturage it abundantly affords, and for its growing better in the shade than other grasses. It is not to be compared in value with Timothy for hay.]

Threshing Machines.—*S. B. S., Ulster Co., N. Y.*, wishes to know the price of one-horse endless chain threshing machines, and wishes the manufacturers would advertise prices in THE CULTIVATOR. We wish so too; but he can obtain the prices by addressing Wheeler, Melick & Co. of this city, G. Westinghouse & Co., Schenectady, or R. M. Harder & Co., Cobleskill, N. Y.

Illustrated Rubus—No. 7.



Illustrated Rubus—No. 8.

Illustrated Rebus—No. 9.

Illustrated Rebus—No. 10.

ANSWERS TO ILLUSTARTED REBUS.—No. 4. "The Albany Cultivator stands above all serials of its stamp."—No. 5. "When fruit raisers assemble in convention they inaugurate wholesome practices."—No. 6. "The more intelligent the farmer, the greater the overplus in profits."

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March 2—w2tm1t. J. RISING, Southwick, Mass.

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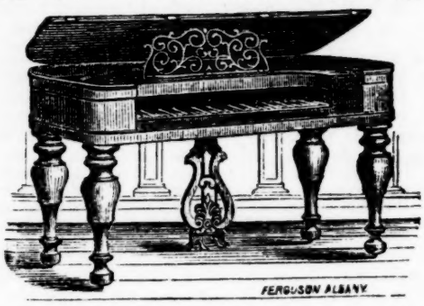

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J. E. EMMONS, Sec'y.

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